SEPTEMBER '57

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MAGAZINE

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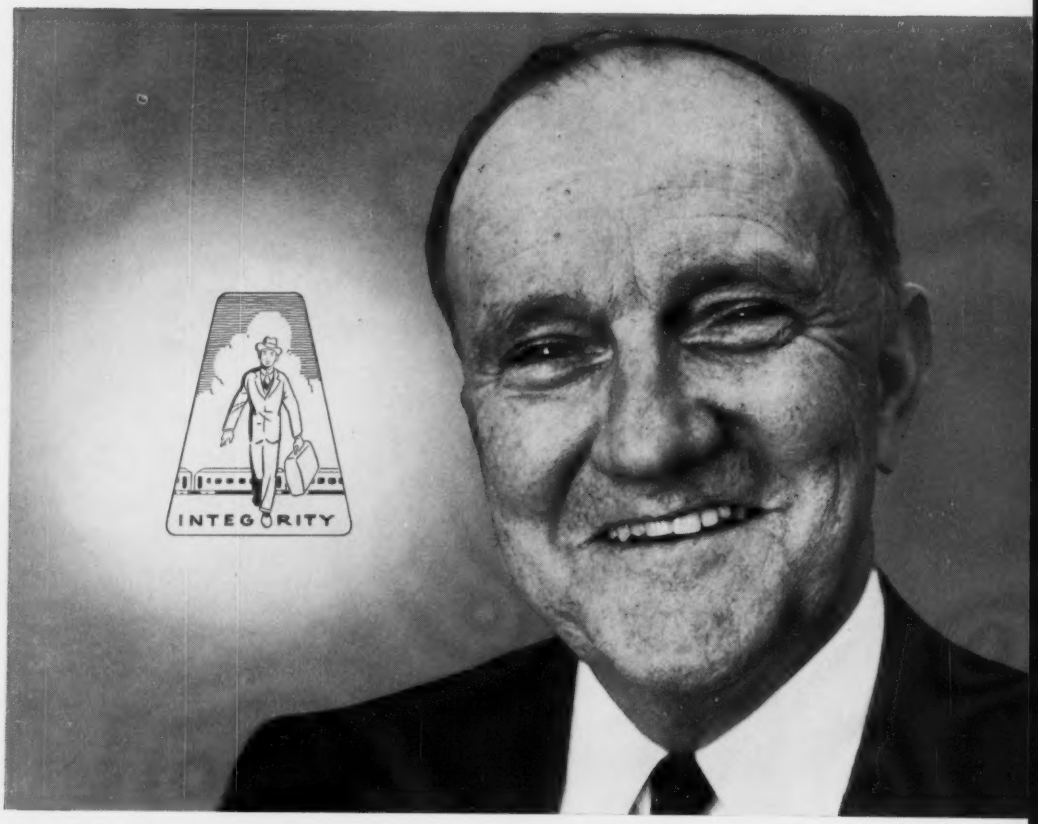

HARRY DALTON of American Viscose — a salesman who traveled up — for his story
See page 33

THIS MONTH'S SPECIAL FEATURES

Annual fiber progress review
New pull-out denier tables
Finishing Dacron-cotton blends
Tests for better warping, slashing

AND 12 MORE HELPFUL ARTICLES AND EXCLUSIVE REPORTS

RINGS

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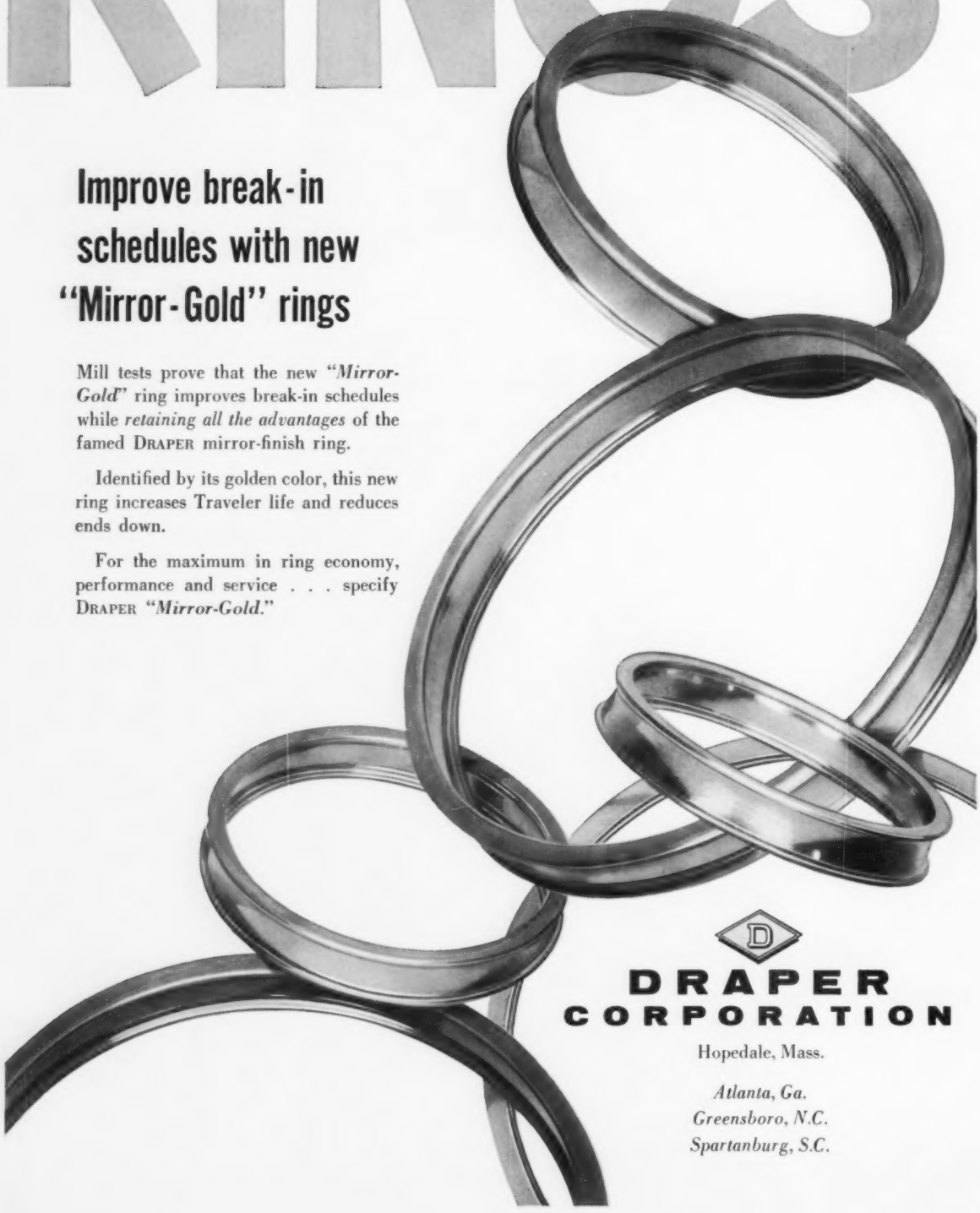

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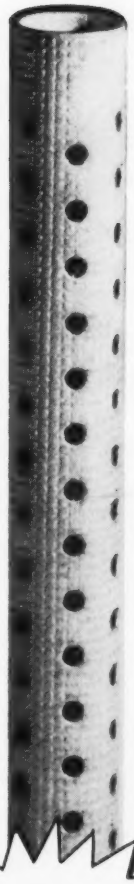

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MODERN
TEXTILES MAGAZINE *

September, 1957 Vol. 38, No. 9

Modern Textiles Magazine
Established 1925

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Published Monthly by
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MUrray Hill 4-0455

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Subscription Rates: North and South America and U. S. Possessions, one year $5.00; all other countries, one year, $8.00. Postage prepaid by the publisher. Single copies (current issue), 60 cents.

BPA
Member of
Business Publications Audit of Circulation, Inc.

Entered as second-class matter at the Post Office, Manchester, N. H. Editorial and Circulation offices at 303 Fifth Avenue, New York 16, N. Y. Publication offices at 215 Canal Street, Manchester, N. H.

(Originally entered as second-class matter at the Post Office, New York, N. Y. August 20, 1925).

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The Principal Trade Groups

Man-Made Fiber Producers Association ..... Empire State Bldg., New York
National Federation of Textiles, Inc. ..... 389 Fifth Ave., New York
American Association of Textile Chemists and Colorists ..... Lowell Techn. Inst., Lowell, Mass.
American Association for Textile Technology, Inc. ..... 100 W. 55th St., New York
Silk and Rayon Printers and Dyers Ass'n of America, Inc. ..... 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers Association ..... 41 E. 42nd St., New York
Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York
American Rayon Institute ..... 350 Fifth Avenue, New York

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Outlook for Rayon, Acetate Held Good

Chemical cellulose fibers are expected to hold their own against newer man-made fibers so long as their prices are lower, the Commerce Department said recently. In a comprehensive study of the supply-demand situation for pulp, paper and board, it was forecast that the cellulosic fibers probably will remain competitive with natural fibers. It was noted, however, that consumer taste will have an important bearing on use of both man-made and natural fibers in textiles and clothing.

Other features of the dissolving wood pulp portion of the study included: consumption of high tenacity rayon tire cord is expected to be important for a number of years, with this market not abruptly or completely lost to new non-cellulosic fibers. Consumption of man-made fibers will be helped further by the continuing efforts of cotton and wool industries to hold their shares of the market, partly by blending with synthetics. By 1965 exports of dissolving wood pulp should exceed 300,000 tons, compared with the 1956 level of about 200,000 tons, with the world market expected to continue to grow for U. S. wood pulp for manufacture into rayon and acetate textiles abroad. *For free copies of the ICC study write the editors.*

June Grads' Salaries High

June graduates of Lowell Technological Institute average $5,311 as their annual starting salary, or $442 a month, according to Prof. James W. Bell, LTI placement director. The average is $411 per year more than the starting average for the class of 1956. Highest starting bid accepted was $7,500 for a textile engineer, who had a choice of two equal offers, and the lowest was $4,160 for a woman textile designer.

Are Textile Engineers Necessary?

The role of the textile engineer in industry as well as the need for such a separate classification of engineering was debated recently at Cornell University at the annual meeting of the American Society for Engineering Education. It was agreed that a heavier concentration on basic scientific and engineering subjects in textile engineering curricula will have to be at the expense of applied textile subjects.

Major reasons given for this curriculum change were the vast technological developments in the last few years in machines, processes and controls, and the certainty that such changes will accelerate rapidly in the future. Teaching of present techniques which may become obsolete soon must give way, it was said, to study of fundamentals and development of research-minded engineers to cope with the future's unknown problems.

The necessity of some training in marketing, management and costing for the textile engineer also was stressed. It was agreed that the textile industry was in many respects unique, and that it needed specialized engineers.

Why Clothes Wear Out

The National Institute of Drycleaning reports that a survey it conducted squelches the belief that drycleaning wears out clothes. The Institute asserts "abrasion in wear" is the villain, and that different people wear out their clothes in different places.

The way people walk, sit and work generally results in some areas of their clothing, such as the knees, pockets, cuffs, etc., abrading first. Since clothes immersed in a drycleaning tumbler all receive the same amount of flexing they would naturally wear out all over if drycleaning had anything to do with it, but such is definitely not the case.

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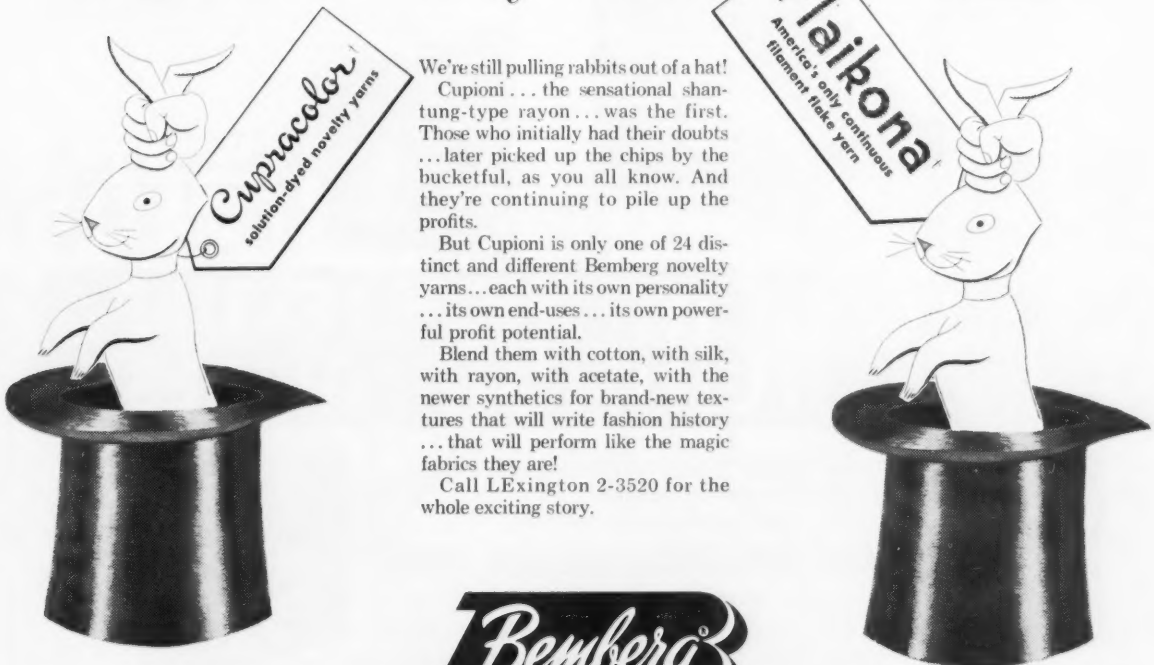

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TUFTED MEN DIG IN—Present at the ground breaking for new office building of Tufted Textiles Manufacturers Ass'n were left to right: T. J. Brown, A. B. Tenenbaum, W. H. Sparks, M. W. Weisen, H. C. Ball, R. E. Hamilton, and J. K. McCutchen.

New TTMA Office Building

Industry leaders and association executives participated in ground-breaking ceremonies for the erection of the Tufted Textile Manufacturers Association's modern new office building in Dalton, Ga. The two-story, air-conditioned building will provide 3,500 square feet of space.

W. H. Sparks, of Mayfair Chenilles, Inc., was elected president of the association at a recent convention in Miami Beach, Fla. Other officers named were: Henry C. Ball, executive vice president, and as vice presidents - Russell C. Gebert, James Lees & Sons Co.; W. H. Griffin, Luxury Carpet Mills; Sam H. Hodges, Jr., Alabama Bedspread Co., and E. D. Lacey, Russell-Lacey Mfg. Co. A. L. Zachry, Jr. of G. H. Rauschenberg Co., was elected treasurer.

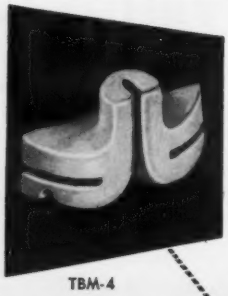
Ask New Cotton Pricing Policy

The Agriculture Committee of the U. S. House of Representatives heard testimony at a recent meeting calling for a Government cotton policy that will make the fiber competitive, improve farm incomes and reduce program operating costs. C. A. Cannon, president of Cannon Mills Co., presented the views of the American Cotton Manufacturers Institute to the committee. He said the industry is not seeking "cheap" cotton but is interested in "competitively priced cotton" so that cotton products can be priced competitively. Mr. Cannon termed the domestic rate of consumption of cotton "stagnant" when related to the tremendous population growth now under way. He said it is most important for producers to share in the great demand for cotton from abroad.

To Enlarge Nylon Plants

Du Pont of Canada will spend more than $7,500-000 over the next year to enlarge facilities at its nylon plants at Kingston and Maitland, Ont., to produce heavy denier nylon yarn for tire cord. Production facilities for adipic acid and hexamethylene diamine, intermediates from which nylon yarn is made, will be enlarged at Maitland to ensure the Kingston plant of adequate raw materials. A five-story addition will be made to the Kingston plant to house new spinning equipment.

for LOWER COSTS



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IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

Allied Opens Textile Lab

Allied Chemical & Dye Corp. has placed in service a new fiber application laboratory in Chesterfield, Va., adjoining the man-made fiber plant of the company's National Aniline Division.

WELL EQUIPPED—Equipment at Allied's new application laboratory includes this tufting machine for experimental work using bulked high denier nylon filament yarns.

The half-acre laboratory will offer users of Allied's Caprolan polyamide fiber opportunity to experiment in new designs and applications, according to George H. Hotte, director of the company's fiber sales and service. He said that the new laboratory is basically a service tool for use by all those concerned with the development, uses and varied applications of Caprolan.

The laboratory's equipment, consisting of a variety of textile mill processing machines such as looms, warpers, full-scale slashing, opening, drawing, spinning, twisting and winding, tufting and some texturizing equipment, will also be used to develop fabrics of all kinds which capitalize on the special performance values of Caprolan.

Staffed by textile engineers, the laboratory is under the supervision of William E. Jennings who has 30 years experience in all major phases of the textile industry.

Mr. Hotte also stated that "this new laboratory is an investment in the future. Not only will our customers benefit by improved products already being manufactured but we will speed the development of new products which now are only in the thinking stage".

New Acrylic Fiber Plant

A company to manufacture acrylic fiber in Japan is to be formed jointly by the Chemstrand Corp. and Mitsubishi Rayon Co., Ltd., of Japan. The new firm will operate under Chemstrand patents. Mitsubishi Rayon is to be the majority stockholder in the new company, Shinko Acrylic Fiber Co., Ltd. Production at Shinko is scheduled to start in 1959 with an initial rated capacity of 7,500,000 pounds annually. Plans call for later expansion of the plant to produce 15,000,000 pounds annually.

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- Electrical Wire Covering
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- Fish Nets
- Flare Parachute Fabrics
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- Hearing Aid Cords
- High Pressure Bandages
- Household Deodorant Wicks
- Inflatable Dunnage Bags
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- Knitted Garden Hose
- Low Stretch Tent Structure Webbing
- Oil Filters
- Oil Suction & Discharge Hose
- Paint Rollers
- Plastic Surfacing
- Ponchos
- Power Transmission Belts
- Pressure Sensitive Tape
- Sand Bags
- Spindle Tape
- Telephone Cords
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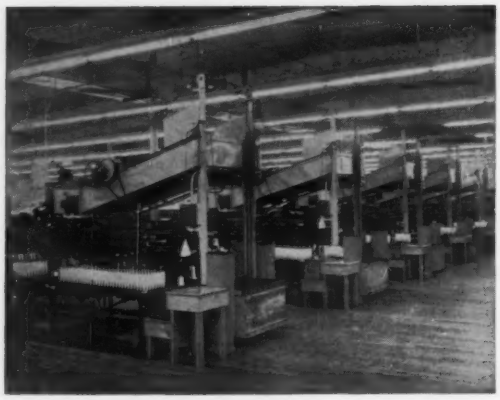

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For winding coarse cotton, worsted, woolen yarns, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

Abbott Model 11 High Speed Automatic Quillers Over 10,000 RPM

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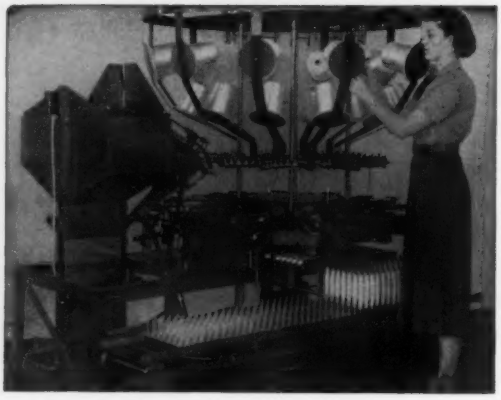

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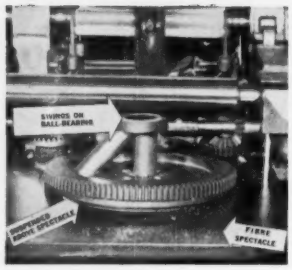

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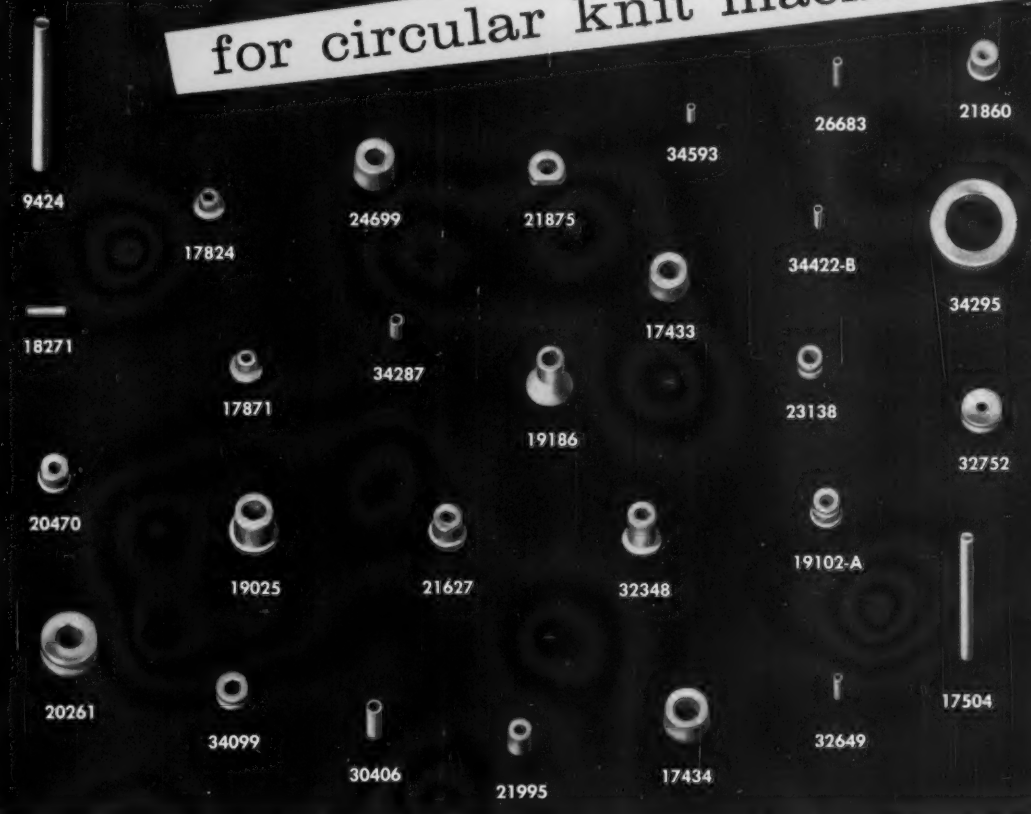
for circular knit machines



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FEWER REPLACEMENTS. Extra long life of AlSiMag guides means less down time, less labor costs.

BETTER QUALITY. Your product is better because these guides help attain uniform tensions. You also eliminate yarn damages which sometimes resulted from undetected guide failures in old type guides that had a smooth surface and a rough underbody.

UNIFORMITY. AlSiMag guides are uniform dimensionally and physically, from guide to guide and from lot to lot. This speeds installation, helps you to attain UNIFORMLY high quality in your product.

LIGHTER TENSIONS. AlSiMag guides are available in controlled finishes.

STATIC CONTROL. Where static is a problem, AlSiMag guides can be supplied in AlSiMag 193 which is identical to 192 except that 193 is electrically conductive.

PROMPT DELIVERY. Ask us about test samples.

AlSiMag No. 22615
I. D.: 0.0935"

AlSiMag No. 17805
I. D.: 0.438"

AlSiMag No. 19185
I. D.: 0.385"

AlSiMag No. 20041
I. D.: 0.469"

AlSiMag No. 20776
I. D.: 0.437"

AlSiMag No. 21088
I. D.: 0.482"

AlSiMag No. 21501
I. D.: 0.625"

NOTE:
These standard AlSiMag Rings are available in various thicknesses; weights in proportion.

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Don't tarry another second! Investigate LANOLIZED *now!* Learn more about this miracle finish that can add so much heavenly comfort to the garments you make!

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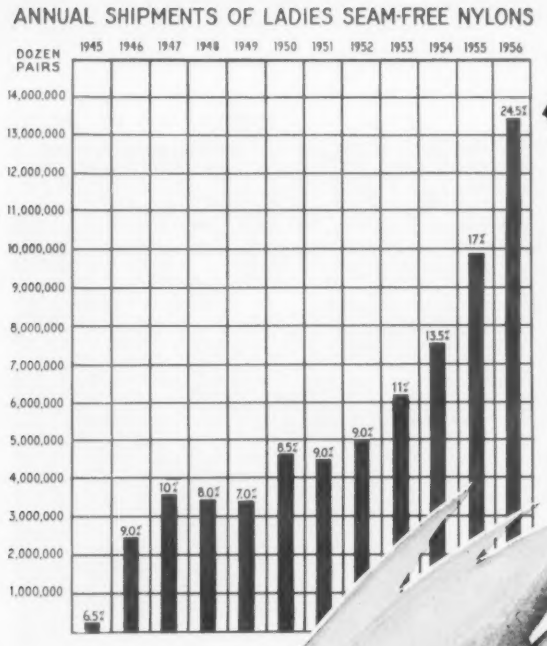
Authorized Manufacturers and Distributors of LANOLIZED—The Miracle Finish. Collins & Westmoreland Sts., Philadelphia 34, Pa. IN CANADA: Scholler Bros., Ltd., St. Catharines, Ontario.



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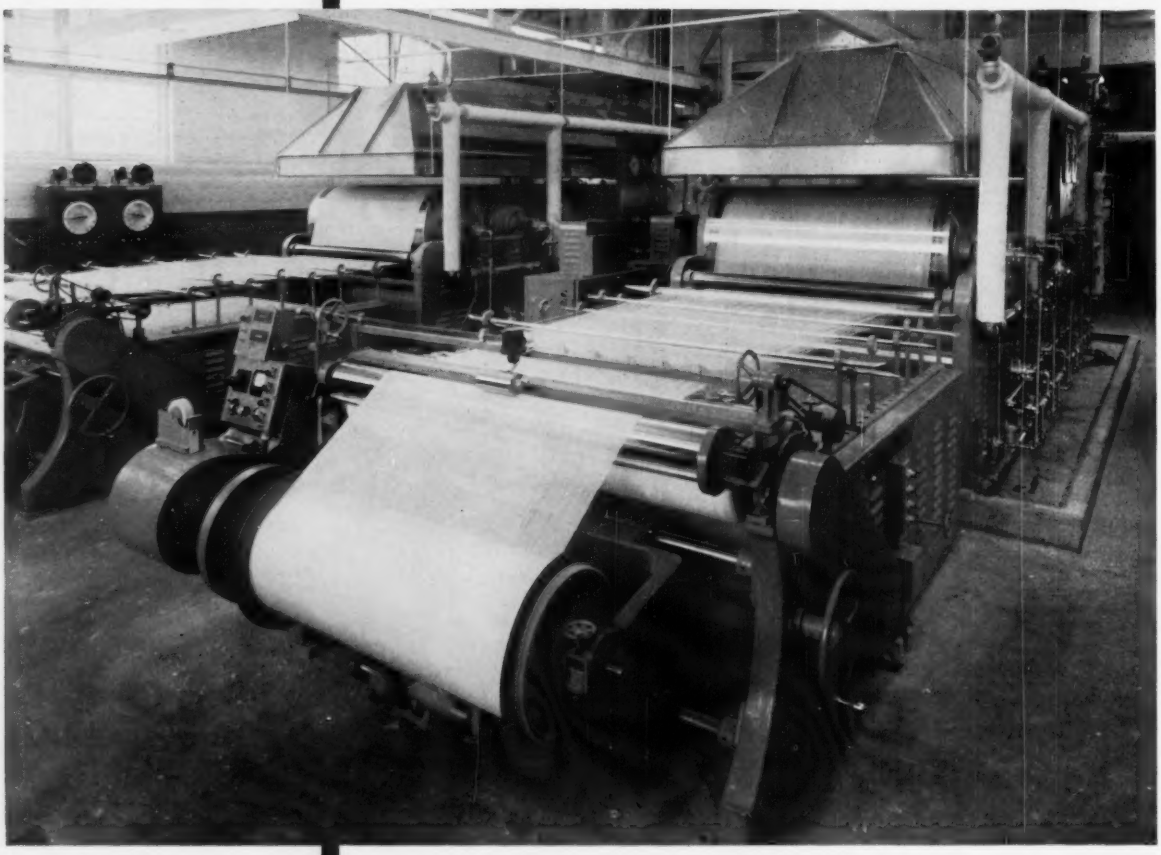

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Ease of application and accuracy
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fade, streak or run.
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For further information, write:
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To manufacturers, converters, cutters, wholesalers and retailers:

LET'S GET THE FACTS STRAIGHT ABOUT MODERN RAYON

Many of the newer synthetic fibers which rocketed to fame in a flurry of claims, a few years ago, have recently suffered a good deal of debunking in trade and consumer circles.

This is hurtful to all of us in the apparel and home furnishings fields. It throws a smoke screen of doubt over the technical improvements and consumer benefits of *every* fiber—including rayon, the world's oldest, most used and *most improved* man-made fiber.

1957 Avisco rayon is not the rayon we all knew in 1945, in 1950—even in 1955. Intensified laboratory research has greatly improved it both in *structure* and in *use*.

It is stronger and vastly more versatile.

It can be kitten-soft in sterile surgical dressings or tiger-tough in tires beneath a truckload of crushed rock.

By itself, rayon can be silky, woolly, cottony or linen-like. In blends, it contributes its unique ability to take and hold gorgeous colors, absorb perspiration, and cut and drape and shape and stitch without seam slippage.

Improper *use* of rayon is swiftly disappearing. Remarkable new finishes, applied properly, add greatly to its superb washability, colorfastness, luster and comfort. The Avisco Integrity Program sets the standards for proper processing to meet end use requirements, and makes it worthwhile for everyone in the trade to observe these standards.

Many important cutters are adding the Avisco® Integrity Tag to apparel and home furnishings made from qualified fabrics. Many retailers find that this added assurance of quality rayon sells more goods and *keeps* them sold.

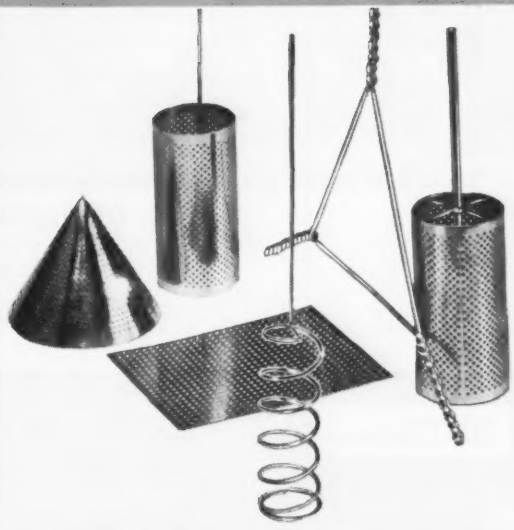
AMERICAN VISCOSE CORPORATION, 350 Fifth Ave., New York 1, N. Y.

SPINNERETTES . . . for synthetic fibers . . . unique in industrial production. Delicate, precision units that are the foundation of an entire manufacturing process. Made of purest metals, under strictest scientific control.

SUPER-SENSITIVE DEOXO® INDICATOR . . . for measuring oxygen or hydrogen present as impurities in other gases. Accurately indicates from 0.0002% to 0.0200% (2 to 200 parts per million) oxygen, and from 0.0004% to 0.0400% hydrogen. A dual range permits measurement of up to 0.25% oxygen or 0.5% hydrogen.

for synthetic fibers ... for indication of O_2 or H_2 ... for producing nitrogen ... for laboratories ...

NITRONEAL® GAS GENERATOR . . . with a controllable hydrogen content—produces oxygen-free gas consisting only of nitrogen, hydrogen and water vapor. Hydrogen content can be varied and maintained as desired between 0.25% and 25%.



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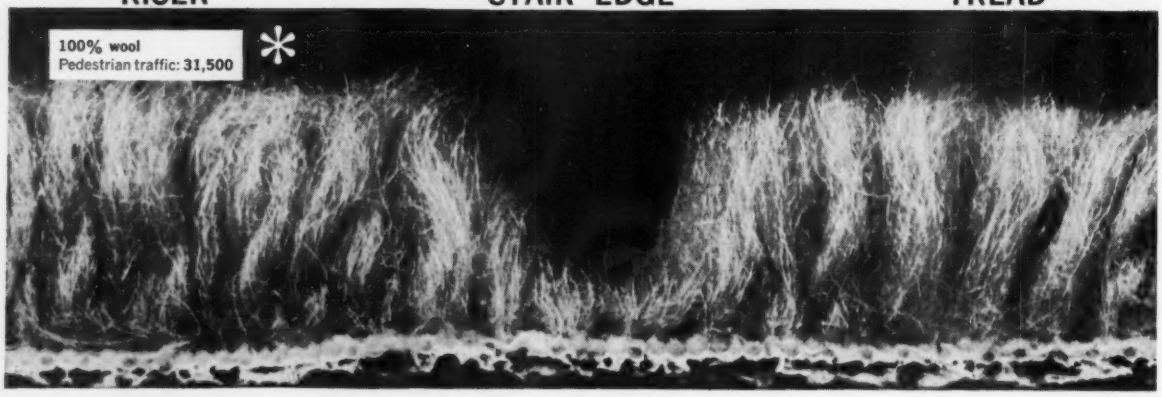
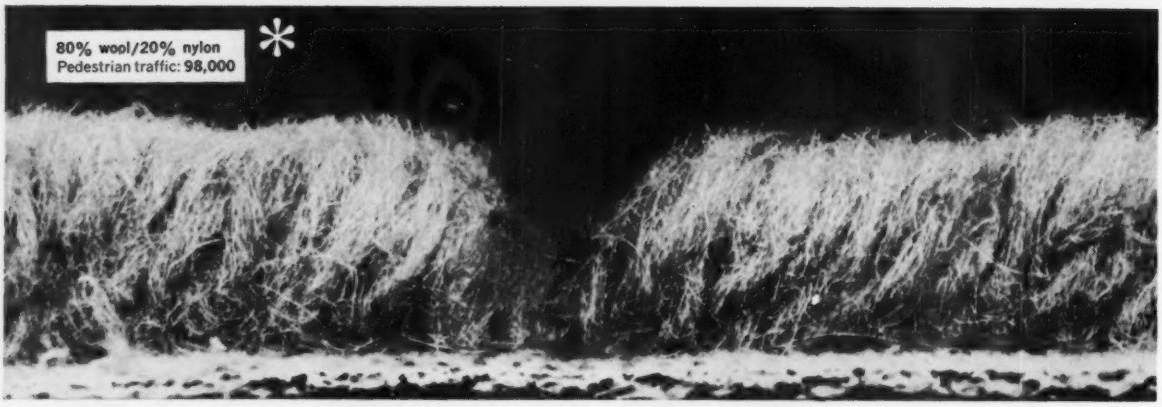
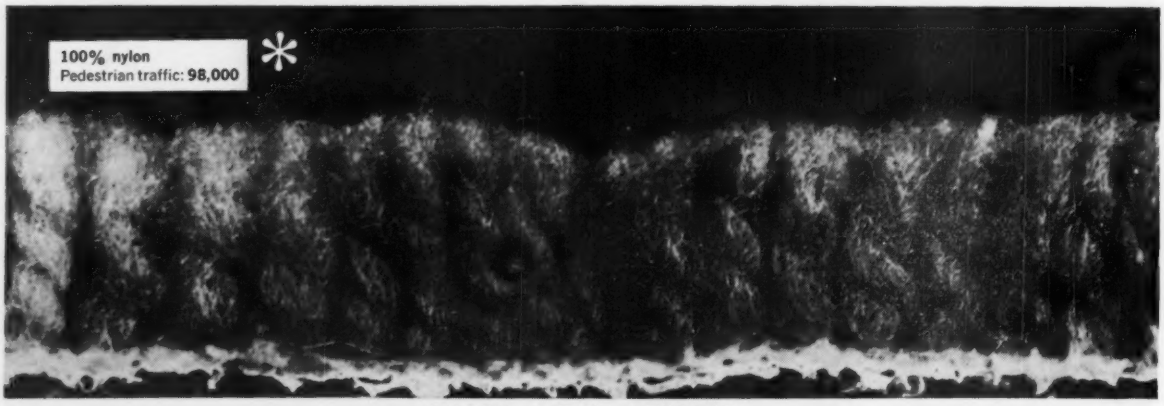
RISER STAIR EDGE TREAD



100% WOOL



80% WOOL/20% I.R.C. NYLON



100% I.R.C. NYLON

* Note that the 100% wool strip wore out almost completely with but one third the pedestrian traffic of the other two strips.

in carpeting, nothing adds wear like NYLON!

How does it wear? That's one of the most important questions consumers ask about carpeting. Permanent textures, higher recovery from crush, excellent resistance to matting, and greater resiliency are other important performance characteristics consumers want to know about. Nylon has them *all*, and they've been proved not only in the laboratory, but in *actual wear tests, too!* Flame-resistance? Nylon does not support flame. *No other fiber adds durability to floor covering like nylon!* The toughest possible traffic test proves... The Higher The Nylon Content—THE LONGER THE WEAR!

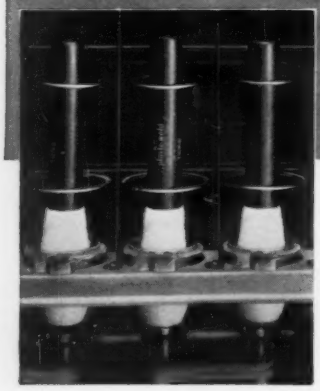
THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, Sales Office: 500 Fifth Avenue, New York 36, New York · 627 Guilford Building, Greensboro, North Carolina

wear... Nylon outwears wool and every other carpeting fiber known. In this test, identical*, unpadded strips of carpeting were laid on bare, rough steps in an industrial plant. Strips were rotated regularly. 100% wool broke down at 31,500 pedestrian traffic mark. 80% wool/20% nylon was still useable after 98,000 pedestrians. At same 98,000 mark, 100% nylon shows virtually no wear.

*strips of carpeting were identical except for fiber content.

DELAWARE MILLS



Says Mr. William C. Appleton, President of Delaware Mills, Inc., "We are well satisfied with our HERR Conical Rings both on spinning and twisting."

Herr Conical Rings are used on these new Saco-Lowell GWALTNEY Spinning Frames. They are also used on Delaware Mills — Universal Winding Company 10B Twisters.

The HERR Conical Ring provides ideal conditions for the spinning or twisting of any yarn.

Produce High Bulk Orlon at Increased Speeds and with Improved Quality by Using . . . .

HERR CONICAL RINGS

Equip with HERR Conical Rings and begin to enjoy these profit making features. You can speed up production, improve quality and lower costs with HERR Conical Rings. You'll gain too, many other advantages. They stop yarn breakage, permit heavier doffs, produce smoother yarns and reduce fly. You'll enjoy cleaner yarn because oil is not thrown off. Frames and room floors stay cleaner. Travelers last longer because oil is carried in capillaries to ring surfaces. Maximum spindle speeds are achieved.

Learn more about these wonder rings. Write today for descriptive literature.

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON AND BLENDED YARNS OF ALL TYPES

HERR MANUFACTURING CO., INC.

308 Franklin St., Buffalo, N. Y.

GREATER TEXTILE OPPORTUNITIES WITH

SARAN

STAPLE • MULTIFILAMENT • TOW

NOW IN A COMPLETE NEW RANGE OF BUILT-IN COLORS

This unretouched microphotograph is a dramatic illustration of the smooth uniform roundness of SARAN Fibers—why they shed grit, dirt and stains—why they offer unusual cleanability, long wear and easy care to finished fabrics. But, even this does not tell the full story, for SARAN has a number of other unique characteristics:

1. **FIRE RESISTANT**—will not support combustion
2. **EXCELLENT ELASTIC RECOVERY**—fabrics won't "cup" or "bag"
3. **UNAFFECTED BY MOISTURE**—moisture will not cause stretching or shrinking
4. **STRENGTH**—equal strength, wet or dry
5. **HIGH ABRASION RESISTANCE**—tough and durable for long wear
6. **FLEXIBILITY**—greater flexibility, size for size, than any other fiber
7. **GOOD COLOR FASTNESS**—colors are "built-in" for greater stability
8. **LUSTER**—desirable sheen for extra sales-appeal
9. **EASY CLEANABILITY**—dirt and most stains cannot penetrate the round smooth fibers—are easily removed

THESE ARE NOT EXAGGERATED ADVERTISING CLAIMS — THEY ARE FACTS . . . proved beyond question in extensive laboratory, field and use tests on fibers and fabrics. Data available on request.

SARAN can make very definite contributions and add a list of impressive selling features to many types of fabrics. If you're a weaver, you can't afford not to check the possibilities SARAN offers for the improvement and increased sales-appeal of your fabrics.

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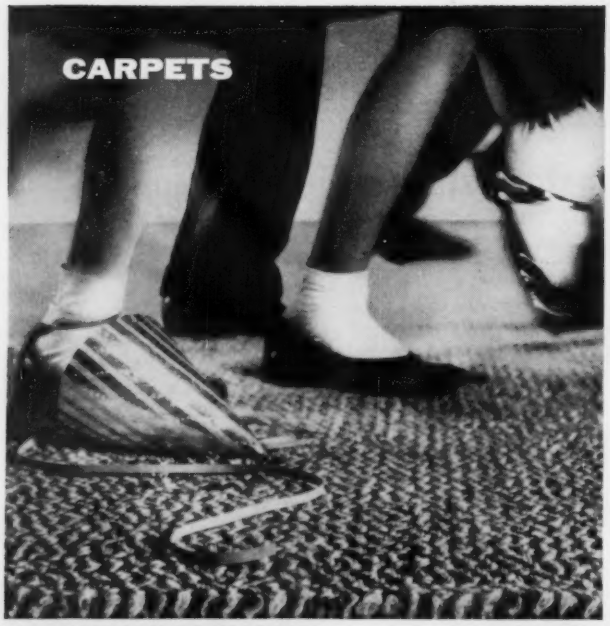
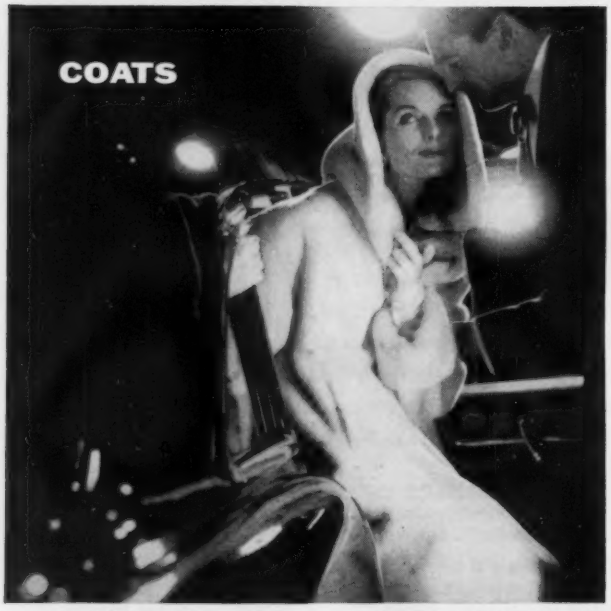
SARAN yarns





IT'S BETTER WIT

Whatever the final use . . . Acrilan Quality Control assures your mill of the top-spinning, smoothest-running fiber in its field.

The uniform top-quality of today's Acrilan acrylic fiber is the direct result of a control system based on specifications, tolerances and standards previously deemed impossible for the newer, man-made fibers.

Thus, luxury blankets of 100% Acrilan acrylic fiber by Chemstrand are the best-sellers in their field. Carpet of 100% Acrilan achieves a resiliency never before attained in the carpet industry. Jersey knits of 100% Acrilan have revived this practical fabric for the children's market, put fresh selling force into women's wash & wear blouses and separates. In the field of woven fabrics, Acrilan acrylic fiber has produced a broad variety of versatile, easy-care, wash & wear fabrics for men's, women's and children's wear.

But whatever the fabric, whatever the end use . . . your own mill can now count on Acrilan performance to

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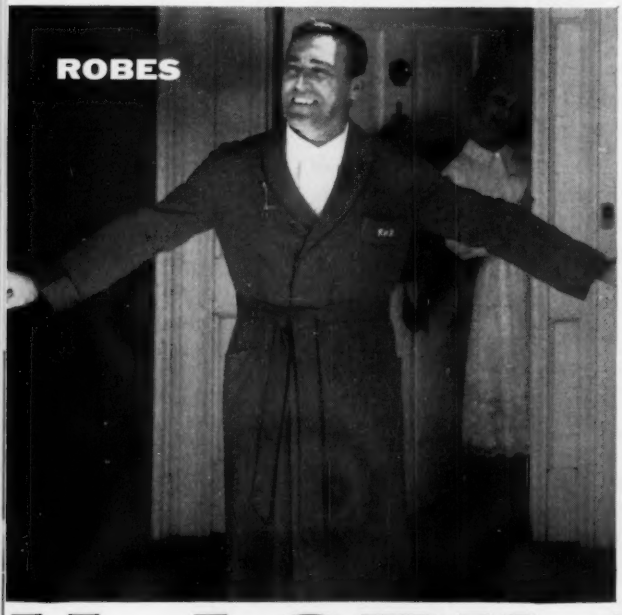

H ACRILAN®!

make the following contributions to efficient, economical operation:

- STAPLE-LENGTH UNIFORMITY superior to the most critical textile needs.
- FLY REDUCTION so significant it is raising yarn quality, reducing mill costs.
- UNIFORM DYEABILITY... dye merges have been maintained without change for over two years now.
- FAR BETTER FINISH CONTROL... directly responsible for improving carding and spinning uniformity.
- IMPROVED HIGH BULK PROCESSING... for greater assurance of fabric shrinkage control.

Applied to *your* mill, don't these advances offer similarly important benefits?

ACRILAN
ACRYLIC FIBER BY CHEMSTRAND
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Starting Sept. 15th, Acrilan® Acrylic Fiber Promoted Over NBC-TV National Network on the New Sunday Night Comedy SALLY Starring Joan Caulfield

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Eastman VEREL

MODIFIED ACRYLIC FIBER

It's looming larger every day . . . Verel, the Eastman fiber with a unique combination of softness, absorbency, whiteness and dyeability. Already it's a solid seller in men's hosiery. Top names in knitwear will be using it 100% as well as with cotton . . . in blends that vary from 50-50 up to the popular 80-20. Major sportswear and apparel manufacturers are featuring it in pile liners and trim that are outstanding for their luxury, clear color, and ease of cleaning. Any day now, important mills in the carpet, blanket and drapery fields will be making their own big news with Verel. How about you?

EASTMAN CHEMICAL PRODUCTS, INC., SUBSIDIARY OF EASTMAN KODAK COMPANY, 260 MADISON AVENUE, NEW YORK 16, N. Y.

MODERN
TEXTILES MAGAZINE

September 1957
Volume 38 Number 9

Publisher's Viewpoint

Man-Made Fibers and Yarns—A Great American Industry

On this page we have often discussed problems which rise to burden the field of man-made fibers and yarns from time to time. In discussing these problems, we have felt it necessary at times, in the best interests of the industry and in the interests of truth and sober facing up to facts, to say some uncomplimentary things.

We have "viewed with alarm" developments which we regarded as contrary to the best interests of the industry that produces and processes man-made fibers into textile products. But this month, as we summarize recent developments in our Annual Progress Review and Outlook issue, we point with pride to this great American industry.

And there is much in our man-made fibers industry of which we are enormously proud. We are proud of the status it has achieved, growing in less than 50 years from an experimental and highly dubious (in the minds of conservative people) field to the position of one of our country's basic industries, furnishing products known and used by virtually everyone from the cradle to the grave; an industry which last year produced one and one-half *billion* pounds of useful fibers and yarns, and more than two and one-half *billion* yards of fabrics.

We are proud of the remarkable fine work done by the companies that produce man-made fibers and yarns in making it easier for mills to use these materials profitably. We are proud of the broad program of intensive basic research which these companies have carried on for decades. It is this research which brought man-made fibers up the grade from the first feeble yarns of "artificial silk" to a host of fibers of broadly varying properties.

It is this research which has given all the man-made fibers one great thing in common—uniformity of quality, known and measurable and predictable through pound after pound, package after package, beam after beam. It is this research which has worked out methods and dyestuffs for dyeing all these fibers—dyeing them in lightfast and washfast colors—colors whose performance can also be predicted and relied upon through yard after yard and piece after piece of finished goods.

We are proud of the product standards of these yarn producers — standards which have caused them to maintain, at great expense, staffs of highly skilled engineers and technicians. These are the tireless men who at a few moments' notice by telephone are ready to grab a bag and run from their comfortable offices to catch a train or a plane to a customer's mill to straighten out some vexing problem of processing man-made fibers. These are the men, who on these arduous assignments, often work around the clock until the problem is solved and the yarns are running easily and smoothly at the customer's plant.

We are proud of the fabric development departments maintained by the producers of man-made fibers. It is in these workshops that fabrics of outstanding beauty and smartness are developed, fabrics that in point of attractiveness and serviceability make the best use of the inherent advantages of man-made fibers.

All these things make us proud of this man-made fibers industry to which we belong. We feel convinced that, in spite of its great achievements, our industry has hardly begun to roll. Its future will be immensely bigger, immensely more important than its past. Its best days are still ahead.

A. H. McCullough

PUBLISHER

OUTLOOK IN TEXTILE MARKETING

By ROBERT C. SHOOK, Textile Economist

Signs point toward better textile business soon

Textile activity in 1956 was inflated by heavy buying of staples in advance of the new minimum wage law, which went into effect at the end of the first quarter. This prolonged the upward phase of the preceding textile cycle. Activity declined in the second and third quarters. However, the fall 1956 recovery was comparatively small in relation to past cycles. Synthetic mills curtailed again in September, and cotton mills in the spring of 1957.

It is plain that the cyclical decline in 1956 did not produce an overall liquidation in inventories sufficient to be followed by a normal recovery into 1957. In the past year, however, comparison of retail sales with production data indicates that there has been a further liquidation in overall textile inventories.

Textile Improvement Virtually Certain—Statistically speaking, therefore, this industry will enter 1958 probably in the strongest position that it has been in since the beginning of 1955. This does not mean that 1958 will duplicate 1955 in terms of total activity and relative price trends. It does mean, however, that volume should show a further improvement and, if the industry avoids over-production, that profits as a whole should be the best in some time.

Some of the developments that may be important in connection with 1958 trends are the following:

There was a further liquidation of textile machinery in 1956, with some indication that this has continued in 1957. To a substantial extent, the excess capacity which has afflicted the industry for years has been eliminated.

It is possible for the industry to over-produce. During late 1956 and for 1957 to date, however, there has been very little incentive to over-produce. Fabric prices have strengthened moderately, but mill margins are still low. Furthermore, most buyers continue to operate on a conservative basis.

During most of 1957 mills generally seem to be moving toward a five-day week basis. However, the incentives to operate six days during 1957 were lacking. And the permanency of a five-day production schedule can hardly be taken for granted until it is tested under more favorable demand conditions.

Short-Term Buying Will Continue—With stock-sales ratios low, new order volume generally should at least reflect seasonal tendencies. With novelties and more highly styled fabrics increasing steadily in relative importance, however, forward buying by retailers, cutters and converters will tend to remain on a more conservative basis.

Introduction of electronic computers by both retailers and cutters recognizes this trend toward short-term operations. Individual firms have found it increasingly necessary to obtain a quicker and more accurate analysis of their current sales and reorders. The retailer, on the one hand, can reorder more quickly, and thus increase his volume in highly seasonal merchandise. The cutter, on the other hand, gets an earlier indication of color and styling preference, and is in a better position to meet seasonal reorders.

Influence of "Minimum Care" Fabrics—Continued expansion in the demand for Minimum Care performance is having an important influence on the choice of fibers, fabrics and finishes. In merchandising, however, there is still a wide variation in practice, from conservative claims to the use of "wash-and-wear" labels as a sales gimmick.

The synthetic industry seems to be taking the more conservative position on minimum care fabrics, and paying the most attention to maintenance of quality. This tendency has been stimulated by the policies of the fiber producers. In cotton fabrics, on the other hand, some deterioration is reported in the quality of finishing. Along with other factors, this may account for the loss of some of cotton's previous popularity in important apparel end-uses. *(Continued on Page 113)*

Dr. Shook is vice president and research director, A. W. Zelomek Associates, Inc., 350 Fifth Ave., New York City.

In 32 years with American Viscose, Harry Dalton has sold a lot of rayon. But more important to him have been the friends he has made, the good he has managed to do for people in and out of textiles.

The millman's cheerful companion

BY THE EDITORS

ONE DAY NOT LONG AGO, Harry Dalton, vice chairman of the American Viscose Corp., and a man of many other important connections and distinguished achievements in textiles, was chatting with his friend, George Boynton, purchasing director of Deering, Milliken. Somehow the question of specialized skills came into the conversation, and they both mentioned persons whose outstanding skills they admired. At this point, Harry, usually a man of undiminishing cheerfulness, was struck by a gloomy thought.

"You know, George," he said, "I envy those fellows who have mastered some difficult skill. Now me, I'm not skilled at anything, and I haven't any particular gifts, one way or another."

"Harry," George said, "don't you ever think that you are not endowed by great talent. You have one gift in remarkable abundance—far more than any man I know. And that is zest for life."

Most persons who know Harry Dalton would agree. Overflowing zest for life is an outstanding characteristic of the man. But along with zest for living, Harry Dalton, undoubtedly has many other great abilities. They have brought him from his beginnings as a "country boy," as he likes to call himself, to be one of the most influential and widely respected men in the textile industry. His abilities, given flavor and forward motion by his "zest for life," have made a place for him in the inner circle of the leading men of American industry.

The Dalton story begins back in Winston-Salem, N. C., where Harry was born on June 13, 1895, the next youngest of seven children. He was descended from solid North Carolina country stock. His grandfather had been a tobacco grower and a trader in mules and horses. His father, Rufus I. Dalton, was in the furniture business in Winston-Salem, and served as mayor.

At an early age, Harry showed a willingness to go out and earn a dollar to eke out the family income which, with seven children in the family, sometimes needed a little augmenting. Among the light tasks to which he turned a willing hand was selling the local journal, the Winston-Salem Sentinel. A resourceful salesman even at that early age, Harry, in shouting his news wares on the streets of downtown Winston-Salem, perfected a trick which attracted customers like magic.

"Mrs. Blub-blub says she didn't do it," he would chortle in a precociously powerful voice, deliberately garbled to whet the curiosity of scandal-hungry citizens. "Mrs. Blub-blub says she didn't do it!"

Anxious to find out what Mrs. Blub-blub didn't do, passersby would snatch newspapers from Harry's hands, showering nickels and dimes on him and not waiting for their change in their haste to read the spicy morsel about Mrs. Blub-blub. By the time they discovered that they had been slightly mislead, Harry, a fast-moving fellow, would be around the corner, selling more papers to new victims of prurient curiosity.

From selling papers, Harry soon moved on to the more lucrative field of selling subscriptions. When he was in the eighth grade, the Sentinel launched a gigantic drive to build its circulation. Newsboys were spurred on to bring in subs by a contest offering such munificent awards as bicycles for division winners and a grand city-wide prize of a genuine live pony and cart. In the face of strenuous competition, Harry not only walked off with his division's prize, but copped the pony and cart as grand winner. To achieve these honors, he whipped around Winston-Salem like a whirlwind selling subscriptions to citizens of all classes. The high point of his campaign came when he stopped on the street the redoubtable R. J. Reynolds, the tobacco king, and persuaded him to buy a subscription although he already had a subscription.

He Chooses Textiles

Harry took good care of the pony and cart, he recalls now, and kept the rig in use and the pony fat and sleek during his four years in high school. In high school, Harry demonstrated his inborn talent for mixing and mingling by participating actively in school affairs. He was a member of the debating team and the dramatic club, and helped bring out the first edition of the school magazine, "Black and Gold."

From high school Harry went to Durham to attend Trinity College (now Duke University). He earned a good part of his expenses while going to school at various campus jobs including a pressing service for students, euphemistically designated as a "pressing club". After his graduation in 1916, Harry was faced with the need to select a field to earn his living. He felt a strong inclination to study law with an eye, perhaps, to a future career in politics. To get a little perspective on his problem and some advice he dropped down to Charlotte to visit his older brother, Robert I. Dalton, who, then as now, was with Whitin Machine Works.

Walking along the street with his brother, Harry was impressed by the sight of a well-dressed man, smoking a big cigar, and driving along at a leisurely speed in a glittering new Pierce Arrow. He asked brother Bob who the prosperous-seeming stranger was. Upon learning that the man with the big cigar and the big new car was Paul Haddock, a well-known dyestuffs salesman in the south, Harry then and there abandoned his inclination toward law and elected to go into textiles. It struck him as being a profitable industry where a young fellow with ability and pep might hope to do well.

At his brother's suggestion, he looked up Mr. Dabbs, a genial Du Pont representative in the South, well-known for helping young fellows get placed in textiles. Mr. Dabbs, at the moment was not able to place Harry in a mill job. He advised Harry to see David Clark, publisher of the Textile Bulletin. Clark hired him as associate editor, later making him advertising manager. Harry remained with the Bulletin until the United States got into the first World War. He promptly enlisted in the Air Corps, saw service in France, and, when the war was over, returned to resume his interrupted textile career with a job with Hunter Manufacturing Co.

Sent as a trainee to the Pomona Mill in Greensboro he worked his way through the mill from the opening to the finishing room, acquiring a working familiarity with all the major forms of textile machinery. In 1921, he was brought to the Hunter sales office on Worth Street, and soon was out selling a line of 27-inch cotton plaids for children's wear. To keep himself occuppied in the evenings he took a course in industrial management at New York University.

Although he did well selling to New York garment manufacturers, Harry, a southern boy, hankered after the green hills of the Piedmont. When a likely opportunity arose for him to return to the South he snatched at it. The opportunity was a job with the Gastonia Cotton Yarn Co., an outfit which sold the output of a large number of spinning mills in the South. For this company, Harry opened a new sales office in Chattanooga. While he was selling yarns for Gastonia, his reputation as a salesman came to the attention of Wickliffe Rose then getting ready to open a sales office in Charlotte, N. C. for the growing American Viscose Corp., leading producer of "artificial silk" as rayon was still called in those days.

Hired by Rose and soon put in charge of the Charlotte office, Harry began his career as a yarn salesman for American Viscose that in time was to make him one of the best-known and best-liked figures in textiles. He was a salesman of prodigious energies. In his work of persuading mills to use rayon, he was tireless. There were many weeks, he recalls now, when he spent six nights in succession on sleeper cars, putting in arduous days calling on customers throughout the textile south.

How To Succeed as a Salesman

Along with a capacity for tireless effort, Harry brought to his selling an inventiveness, and a willingness to take chances that anyone with less personal charm might have found impossible to get away with. One day, to cite an example, he looked in the reception room of a mill in a small southern town to see not less than a dozen salesmen ahead of him waiting to see the purchasing agent. The weather was cruelly hot and the afternoon waning. Harry had no taste for waiting his turn in the stuffy little reception room.

Taking in the situation at a glance, he slipped into an empty side office, shed his coat, rolled up his sleeves, stuck a pencil behind his ear and grabbed a handful of papers. Before anyone could realize that he was not one of the office staff, he strode briskly through the reception room and through a long office of clerical workers to the sanctum of the purchasing agent. Amused by Harry's audacity, and beguiled by his flow of jokes, the man was persuaded to give him an order.

When he began to sell rayon yarns, the chief customers were manufacturers such as Hanes Hosiery Co. which used rayon to knit seamless stockings. Harry went on selling the hosiery mills, but he worked hard also to persuade weavers to try rayon. One of his first weaving customers was Virginia Mills

(Continued on Page 106)

Better textile packaging

Colorful, customer-attracting retail cartons can help sales of many textile end products

STAFF PREPARED

RETAILERS want vendors of textile products to develop creative packaging that will help them merchandise more efficiently. They are convinced that the trend of self-selection calls for more packaging to boost sales and cut costs—and thus raise profits both for stores and manufacturers.

These are the conclusions of a recent survey of department-store packaging conducted by the Folding Paper Box Association in cooperation with the National Retail Dry Goods Association.

In the study, the 110 top department store executives interviewed said creative packaging can boost sales in seven ways and reduce costs in 14 ways. Two of the most important sales-boosting points, from the standpoint of textile suppliers, were: 1) packaging that converts staples into exciting, year-'round gifts; and 2) packaging that stimulates in-store buying decisions.

The textile industry can benefit by this "retail thinking." In relation to other phases of our booming economy, the textile industry is not keeping pace—in terms of either sales or profits. But the new concept of gearing sales promotion to the requirements of retailers—who must sell goods in an increasingly competitive market—can help textile manufacturers out of their difficulties.

The problem facing the textile industry was summed up recently by Malcolm P. McNair, professor of retailing at Harvard Business School, who said that the "downhill" trend of the soft-goods field in its competition for the consumer dollar can be traced to "its failure to do as good a job of merchandising as other manufacturers have done."

Not only can packaging with a retail flavor help boost sales, but it can also open new markets for textile products. The distribution shift in a wide range of retail outlets finds soft goods—once sold primarily in department and specialty shops—now appearing on the shelves of supermarkets as well as chain drug and variety stores.

Just how firm a foothold textile suppliers can establish in these highly competitive outlets will depend on the imagination with which they merchandise.

Gift packaging provides textile firms with a versatile tool to broaden their coverage in these new fields, because it capitalizes on an important economic factor: the record high buying power of the consumer for discretionary, or nonessential, goods.

At the recent packaging clinic sponsored by NRDGA, Harry Lapow, noted package designer, pointed out that Americans buy an estimated 4 to 5 billion gifts a year. He also declared that retailers in all fields are stepping up their promotions for special holidays and other merchandising events—thus opening up the door to greater gift buying around the calendar instead of exclusively at Christmas time.

Many alert textile firms have already recognized the volume potential inherent in the gift-packaging field. Here are some outstanding recent examples of packages that "trade-up" through packaging:

In the women's hosiery field, manufacturers such as Julius Kayser & Co. and Van Raalte have designed folding-carton sleeves especially for such high-volume gift-giving occasions as Christmas, Mother's Day and Valentine's Day.

Gift packaging of men's hose is distinguished by a colorful multiple carton holding three pair of stretch socks made by Jerks Socks, Inc., (Fig. 1).

Multi-colored packaging greatly enhances gift packaging in the towel field. Among the most striking cartons are the Harmony House Gift Bath Set (Fig. 2) made by Sears Roebuck & Co.; the towel assortment

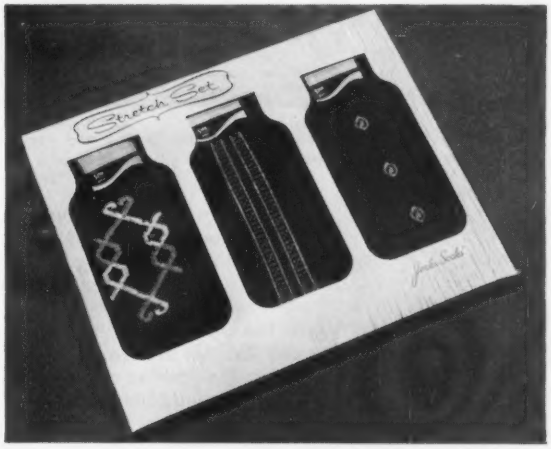

FIG. 1—Display package for men's socks.

FIG. 2—Gift packaging for bath set.

FIG. 3—Another example of gift packaging.

of Dundee Mills in a carton (Fig. 3) that features special compartments holding a gift bonus of either sachet or perfume; and the line of Cannon towels whose multi-colored assortments are matched in brilliance by equally dramatic cartons (Fig. 4) adorned with sales-provoking decorations.

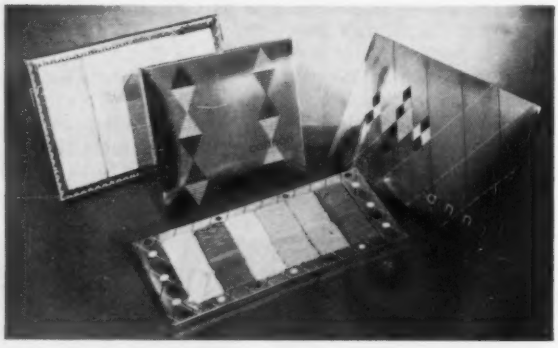

FIG. 4—Towels packaged this way are easy to give and easy to receive and thus easy to sell to the gift-shopper.

With the rise in popularity of electric blankets, manufacturers in this field have designed clever cartons, so constructed that they provide practical means for handling the electrical control units while still retaining attractive gift appeal.

Notable examples are the special display carton developed by J. C. Penney Co. for its Golden Dawn blanket, and the colorful window carton designed by Fieldcrest Mills, Inc. for its automatic blanket.

Packaging Encourages Take-Withs

In addition to gift packaging, the FPBA-NRDGA department store study stressed the importance of packaging that encourages shoppers to take their purchases with them. Of particular importance was the stress on vendor packaging that would require no additional wrapping by the retailer.

To capitalize on this demand, many textile firms are creating folding cartons with carrying handles that invite "walk-outs." The Sock Pak for hosiery yarn made by Spinnerin Yarn Co. (Fig. 5) embodies all the major elements of a take-home package.

The carton has a handle, a film window to show the yarn without the need to open the package, full-color illustrations of eight different yarn combinations for argyle socks—and even a perforation in the top panel to allow knitting needles to be inserted, thus giving the package re-use value as a sewing kit.

Take-with purchases are also encouraged by cartons, with carry-handles, that simulate traveling bags, such as the cabana set made by Bardell Shirt Co. consisting of swim trunks and blouse under the B. V. D. name, and the colorful cartons for bathing suits manufactured by Jantzen.

Vendors who market their wares in packages that make it easier for personnel to warehouse, take inventory, set up displays and promote are providing retailers with an essential merchandising tool. The folding paper box is an effective package for performing these selling tasks in the textile industry because:

1) Folding cartons reproduce illustrations, selling copy, trade-marks, color designs and other printed matter with superior quality—and at low cost.

2) Packages of unusual shape can be inexpensively produced, when the choice is a folding carton.

3) Folding paper boxes can be easily adapted to use with other packaging materials, such as transparent films, for greater visibility.

Department stores have placed the burden for developing creative packaging squarely on the shoulders of the vendor.

They cited many textile departments that require improved packaging—among them: hosiery, shirts, sweaters, men's and women's apparel accessories, linens, curtains and sheets.

Many retailers feel that merchandise prepackaged by the vendor arrives at the store in more salable condition. "Merchandise stays fresh and clean when it is prepackaged—and it also saves on the cost of gift boxes," according to Irving Greentree Jr., president of Greentree's in Richmond, Va.

The new attitude of retailers towards packaging challenges the textile industry to bring itself up-to-date. At present, soft goods vendors are lagging in the parade of prepackaging. They have failed to grasp the significance of the disappearing glass counter. Their effort is still geared to personal salesmanship.

But this is not the picture in retail outlets today. Competitive mass merchandising has created an entirely new aspect in retailing. The emphasis has shifted to selling by brands—with the incentive to buy sparked by recognition at the point of sale. This type of identification can best be achieved by dramatic creative packaging. ■

FIG. 5—This package invites the customer to carry it away.

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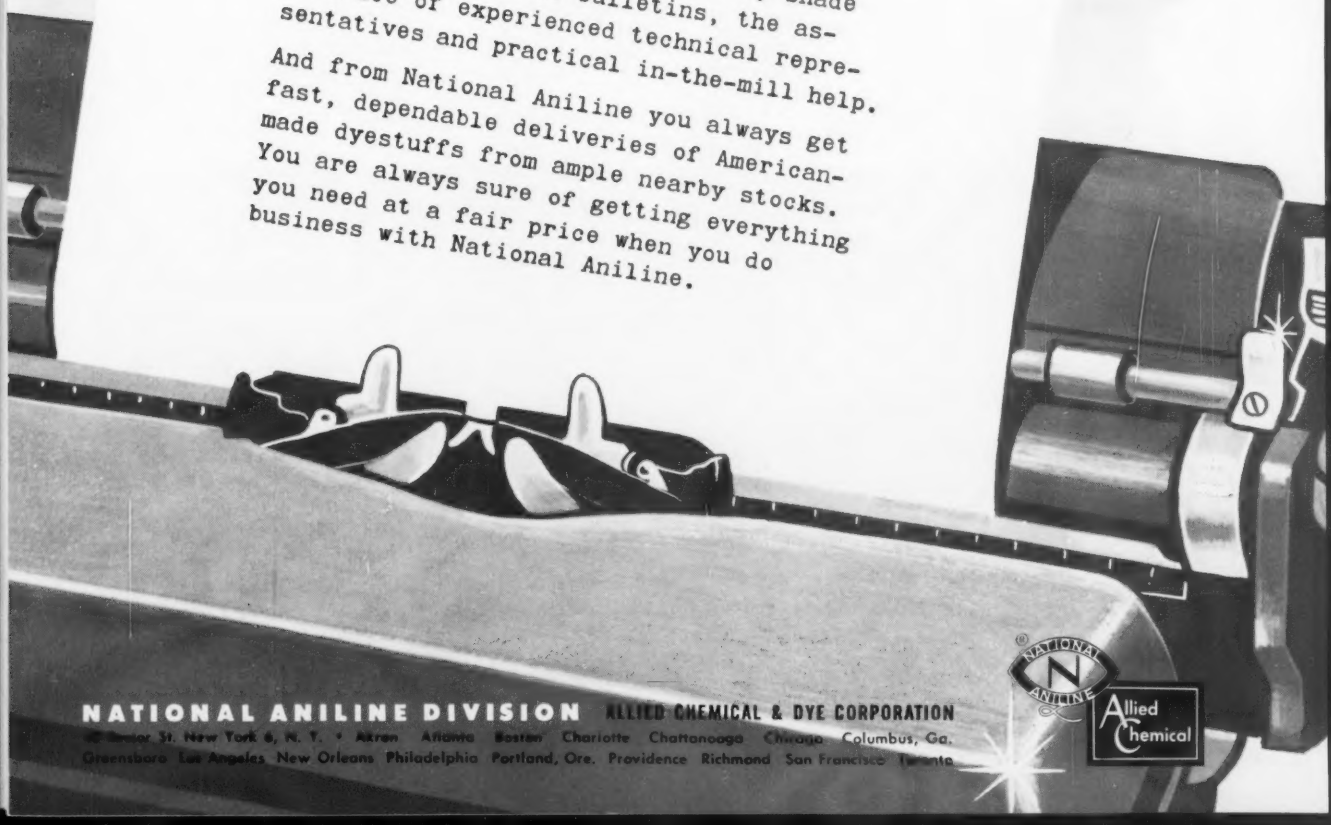

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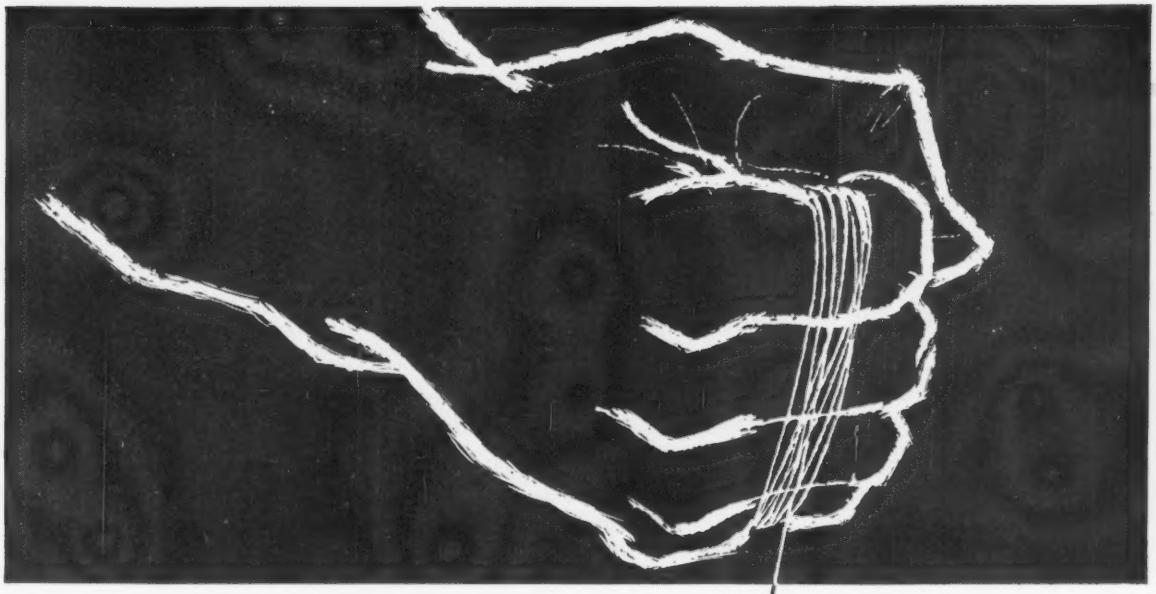

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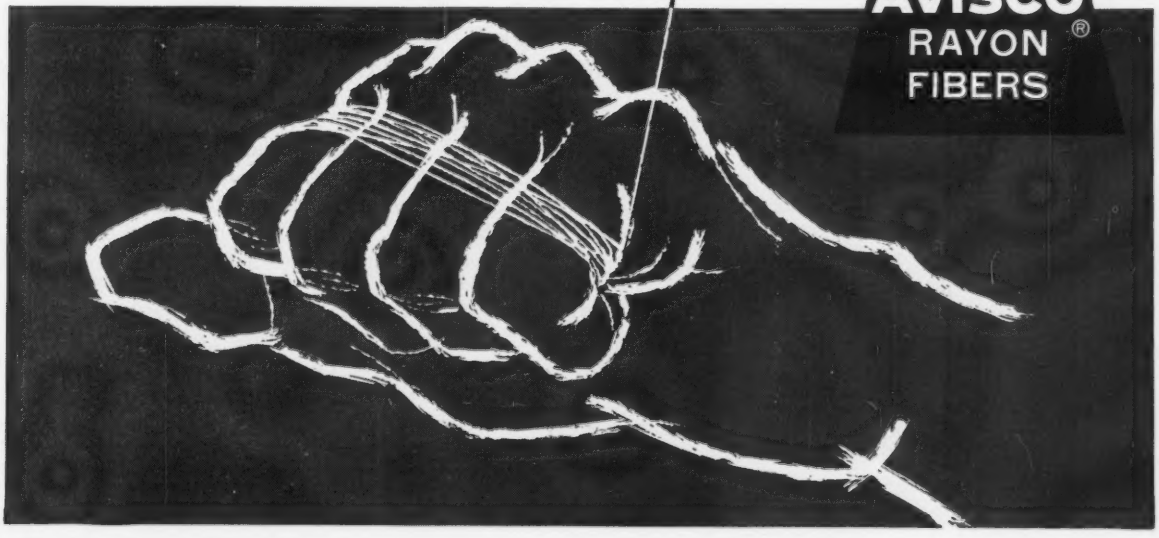

REPORT FROM EUROPE

BY SPECIAL CORRESPONDENT

Europe's textile producers urged to modernize; Swedish weavers have troubles; U.K. prices edge up

PARIS—Europe's cotton and rayon using industry will have to double its present rate of investment for the next eight to 10 years to provide sufficient modern products to compete on the increasingly difficult world market.

This is the conclusion of a 95-page report, "The Future of the European Cotton Industry," released a few weeks ago by the Organization for European Economic Cooperation. The report adds that modernization would mean an investment increase of about $110 million up to 1965 and it presupposes two to three shift industry operations.

Warns on Import Rise—While noting that the cotton and rayon using industry (mainly clothing, but including upholstery and industrial) "will not expand by much more than 10% a year during the next few years," OEEC also warns that "Asiatic imports could be expected to increase." But whether such rise would be dangerous would depend upon the policies pursued by the European nations themselves: i.e., whether they modernize and restore confidence in the industry.

Europe's Fabric Exports Fall—European exports have been declining "spectacularly" and the trend "is not likely to be reversed." However, exports have become marginal for most European nations. The report suggested that "European manufacturers cooperate. . .to specialize in certain lines."

Sweden's Textiles Suffer—During the past few years, Sweden's textile industry has been hit by import competition—both European and Japanese. Wool price rises have been especially hard for Swedish mill men to minimize. And wool fabric imports have risen at a time when domestic wages were on the way up. Mills have been operating at a loss. The stage is being set for (1) a wave of mergers and (2) stepped up use of automation. Meanwhile, a man can buy a good English tweed suit for 200 Kronors, about $40.

British Price Rise Due—The Rayon Staple Spinners' and Doublers' Association has recommended that its member firms boost prices 5%—through a widening of margins—in order to compensate for higher fuel, freight and wage costs. Lancashire textile workers recently received a 5% pay hike. On medium rayon yarns, the rise is computed at 1-1¼ pence per pound.

Irish Industry Expands—Three large users of man-made fibers in Ireland and two big British producers will back a new plant in the Emerald Isle which would have both a domestic and an export market. The factory would specialize in twisting man-made fibers for Irish weavers. A company has been formed, and the plant construction and installation cost was estimated at 280,000 pounds sterling ($764,000). The two U. K. producing companies are G. H. Heath & Co. Ltd, Cheshire, and William Tatton and Co. Ltd., Staffordshire.

Russian Synthetics Progress—News of Russian man-made textiles comes few and far between. The monthly review, "Teknikha Molodyezhi," has provided some news about Kapron, a nylon type fiber based on phenol. Kapron fabrics are said to be 15% lighter than silk and nearly 3½ times stronger. Kapron is used in fabrics, hosiery and for artificial Persian lamb fur coats. Fishing net and tire cord use is rising. The Russian hose industry has received Kapron thread 0.5 millimeters for stitching soles.

The Russian magazine also reveals that Soviet manufacturers are now making two wool-like synthetic fibers. They are called Lavsan and Nitron. The former resembles Kapron but has a higher heat retention. Nitron is more crease-resistant and used in suitings. And then there is Chlorin, an acid resistant fiber, used for industrial textiles.

(Continued on Page 119)

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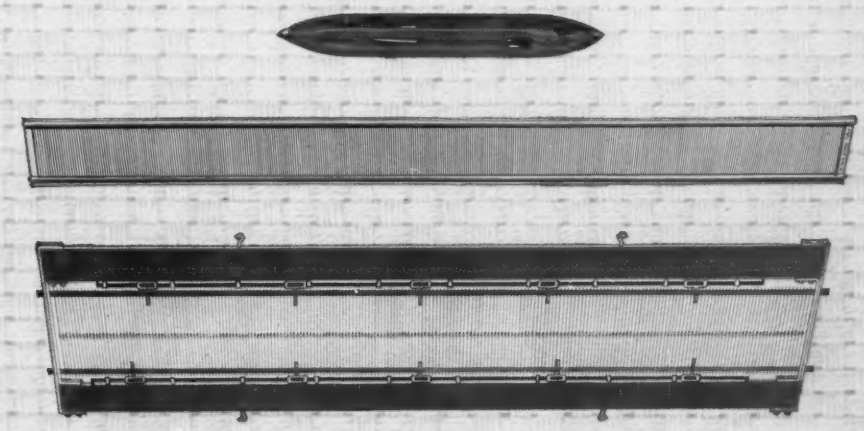

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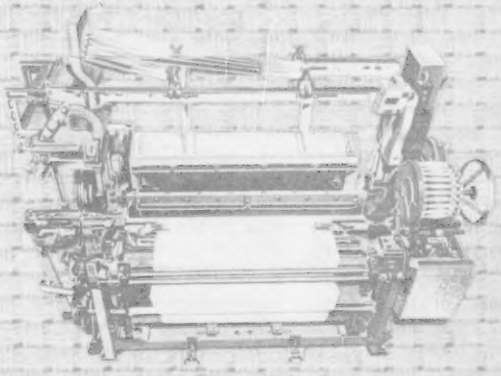

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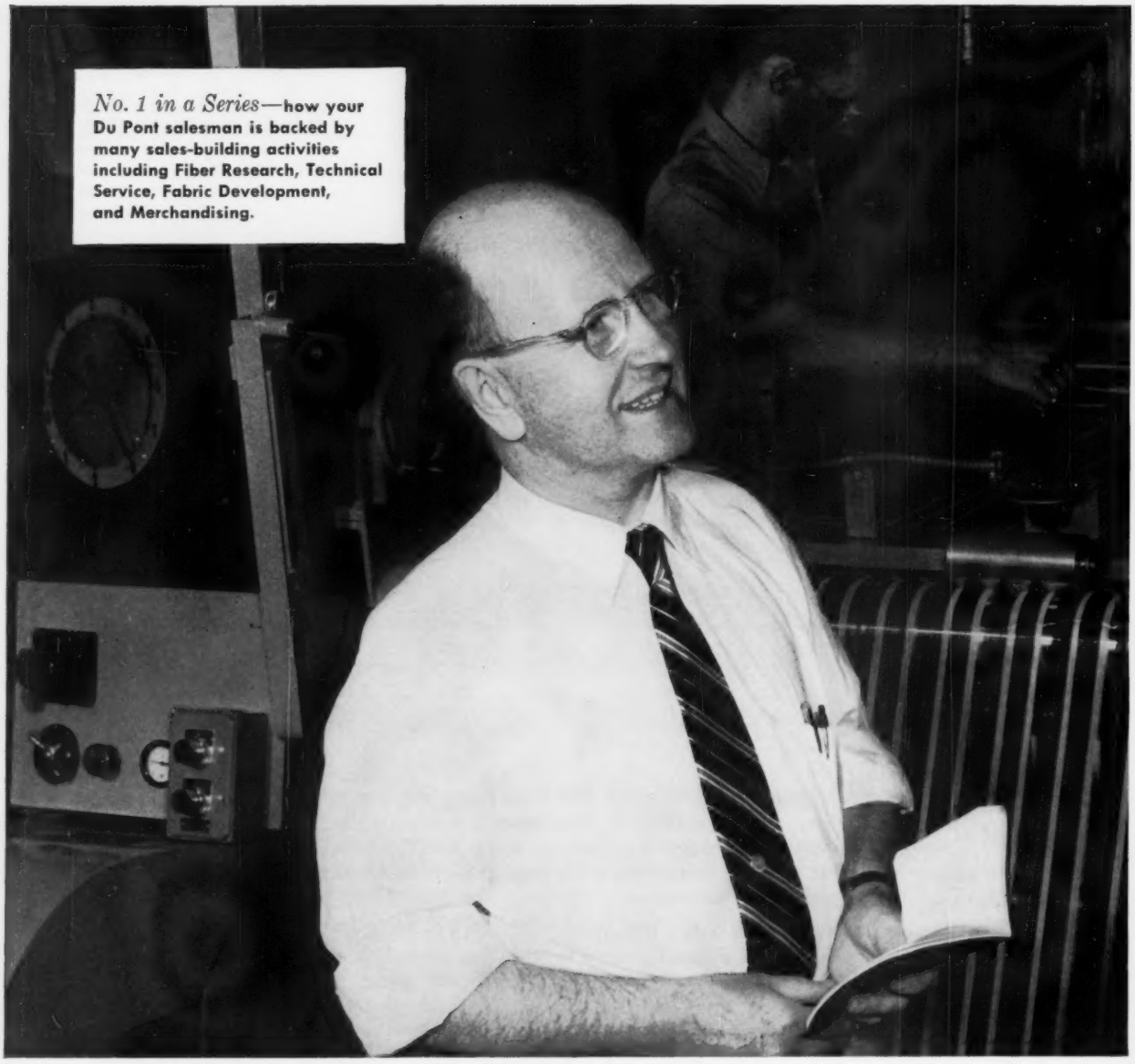
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This Tech Service man brings to Du Pont's

Chemist by training (Cornell and Heidelberg), pioneer in nylon throwing, Rudy Schramm (at left, above) has years of practical experience that make him one of the key men in Du Pont's 125-man Technical Service organization. Collectively, these men have spent about 1,500 years working in and with mills. This experience is organized to assure you comprehensive up-to-date information on fibers and how to use them. First, there are separate teams of specialists which concentrate on testing, quality control and development of each Du Pont fiber. Backing them up are the groups which spend their time on broader aspects, such as dyeing and finishing, fabric development and laboratory service.

Knowledge accumulated by all of these groups is published in the "Technical Information Bulletins." Nearly 200 up-to-date bulletins are now in print. Millmen tell us they are time and money savers.

Rudy Schramm and his co-workers

FROM RAW FIBERS TO RETAIL SALES . . .

1,500 years' experience customers

in Tech Service answer about 5,000 requests for assistance each year. They pass on their experience and know-how by phone, mail and, when the problem needs on-the-spot attention, by personal visits to customers' mills. They're topnotch people, efficiently organized to give you technical service that you can depend on.

Du Pont believes it can increase the market for its fibers and thus benefit its customers by providing useful assistance to all levels of the textile industry. It's through your Du Pont salesman that you as a customer have access to a range of technical and merchandising information unique in the textile industry.

PRODUCT AND PROCESS NOTES FROM DU PONT

Hi-Bulk Filament Yarn—a new hi-bulk acetate filament yarn, called Type 20, is now available in 75, 150 and heavier deniers. In addition to bulk, this yarn imparts silk-like hand and luster to lingerie and apparel fabrics, and superior pile coverage to frieze upholstery fabrics.

Greater Tear Strength—cotton-nylon blends will soon have much improved tear strength as well as the great abrasion resistance previously obtained. Type 420 nylon staple, now available in limited quantity, has been engineered to match the stress-strain relationship of cotton.

"Tinselfil" Thick & Thin Rayon—this new rayon fashion yarn is now commercially available in 450 and 700 denier. Tough and lustrous, "Tinselfil" was developed to give designers another tool for creating new and interesting effects in drapery, suiting, millinery and upholstery fabrics.

New Heat and Sunlight Resistance—for outdoor and industrial uses, new Type 330 nylon has shown up to 3 times the sunlight resistance and many times the heat resistance of other nylon in laboratory tests. Available in 210 denier, it has promise in many applications, particularly for coated fabrics which can be translucent or pastel for new sales appeal.

Technical Information Bulletins contain detailed, practical information on Du Pont product and process developments. They cover fiber properties, mill processing, dyeing and finishing. Refer to your copies frequently; they can save you time and money. To be sure you have all the bulletins you need, check your Du Pont salesman or Tech Service representative.

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REPORT FROM JAPAN

Japanese mills cut back output of rayon, acetate; Cotton goods shipments running well below quotas

By B. Mori

OSAKA—Production curtailment in rayon industries has now been enforced fairly uniformly at all levels: staple and filament, spun yarn and woven fabrics. Cutback applies principally to viscose products, but the Government has asked manufacturers of acetate and cuprammonium to "cooperate."

This development is not unique in rayon industry. Whole textile industry has been experiencing a slump in domestic demand since the turn of year. Also, Government's "tight money" policy has accentuated problem of inventory maintenance at all distribution levels. Hardest hit are wholesale distributors, mostly small firms with little capital. Production cutback in rayons, cottons, and woolens is designed to take pressure off them and, in turn, off falling retail price structure.

Textile Raw Material Imports May Be Cut—Connected with production curtailment program, but stemming more directly from deteriorating position of Japan's foreign exchange account, is Government's decision to reduce allocations for import of textile raw materials.

In first half of current fiscal year, imports have been cut about 35% in rayon pulp; 25% in raw cotton and raw wool. Depending on foreign currency situation, cutbacks of similar magnitude may be made for second fiscal half-year.

Any mention of foreign currency problem must make note of fact that excessive imports are at root of the trouble; because export contract validations in the first half of 1957 were 18% above 1956 period. (Sales to the U. S. were up 9%.)

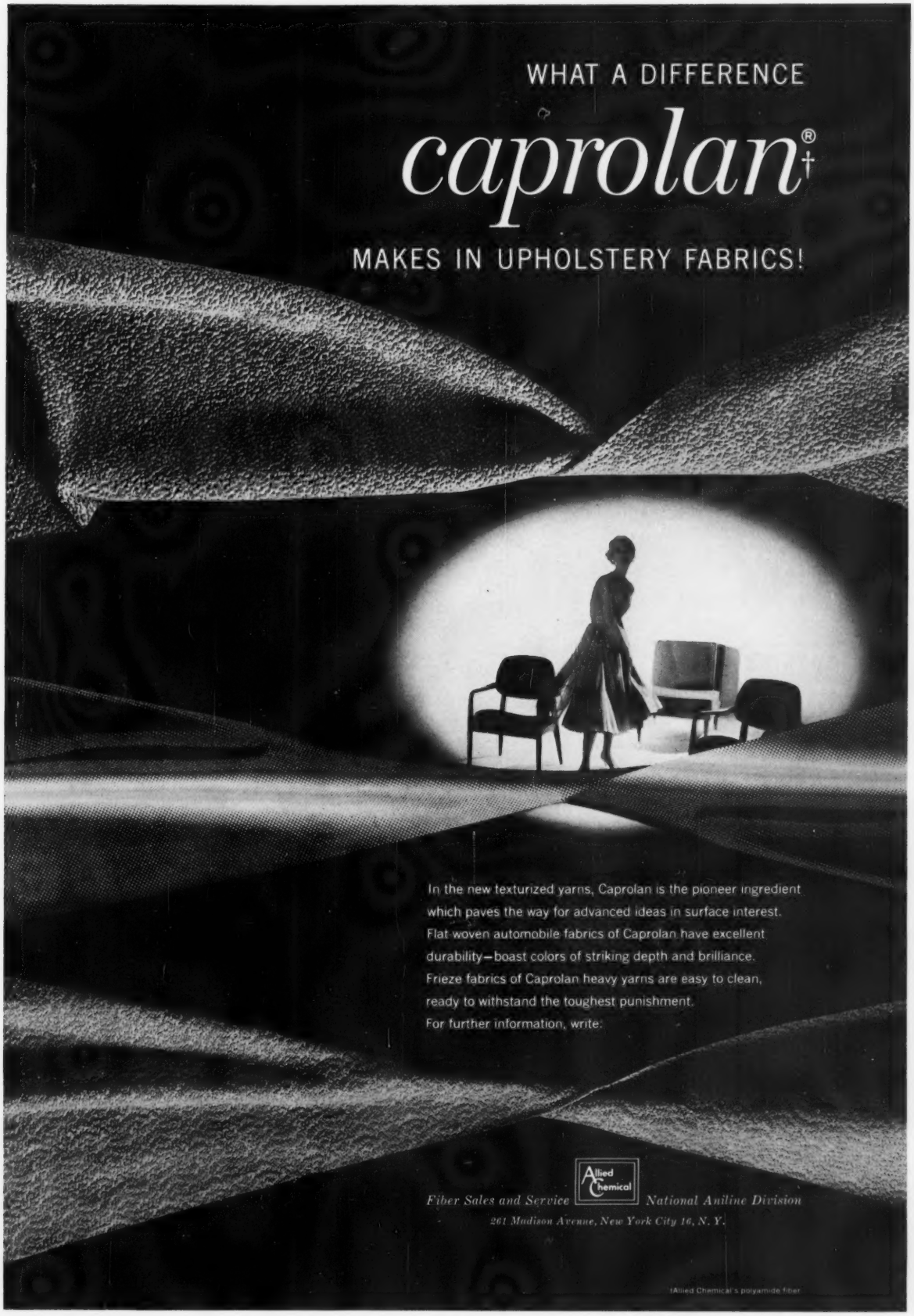
Cotton Goods Quotas Bypassed—Enforcement of cotton products export quota system has involved new headaches. Despite disadvantageous shipping charges, both piece goods and made-up apparel have been transhipped to U. S. in small but embarrassing quantities, via third countries. These goods still bear Japanese origin when they reach U. S., so they cannot be undetected. Persons participating in this trade are those who cannot obtain export quotas here (because of no history of export). It is ironic, however, that this subterfuge must be used by some companies at time when others cannot even sell enough goods to fill their quotas.

But Total Shipments Are Below Quotas—Exports of cotton textiles to U. S. in first half of 1957 were about 31 million square yards, compared with almost 80 million in the same half of 1956, and compared with an annual quota of 112 million for 1957.

It is obvious that full quota will not be filled; while quotas for secondary products are being sold out. So the Government has taken advantage of the 10%-shift provision of quota agreement, and has shifted 10% of cloth quota into minor secondary products, so that income from unfilled fabric quotas will not be "lost."

Silk Output Climbing While Exports Drop—Production of raw silk this season will undoubtedly reach new postwar high—at just about maximum level that can be expected from present mulberry acreage. At the same time, exports are faltering, particularly to U. S. For the first time exports of silk in form of woven fabrics may possibly exceed exports of raw silk this year.

Late News Flashes—Exports of textile machinery this year are expected to be 10% below 1956, after five or six years of booming sales. . .The Government has announced its intention of strengthening drive for foreign markets, through strengthened "economic diplomacy," . .Wool textile manufacturers are laying plans for larger sales to U. S. despite the above-quota tariffs. The problem is how to push under-quota sales without depressing prices.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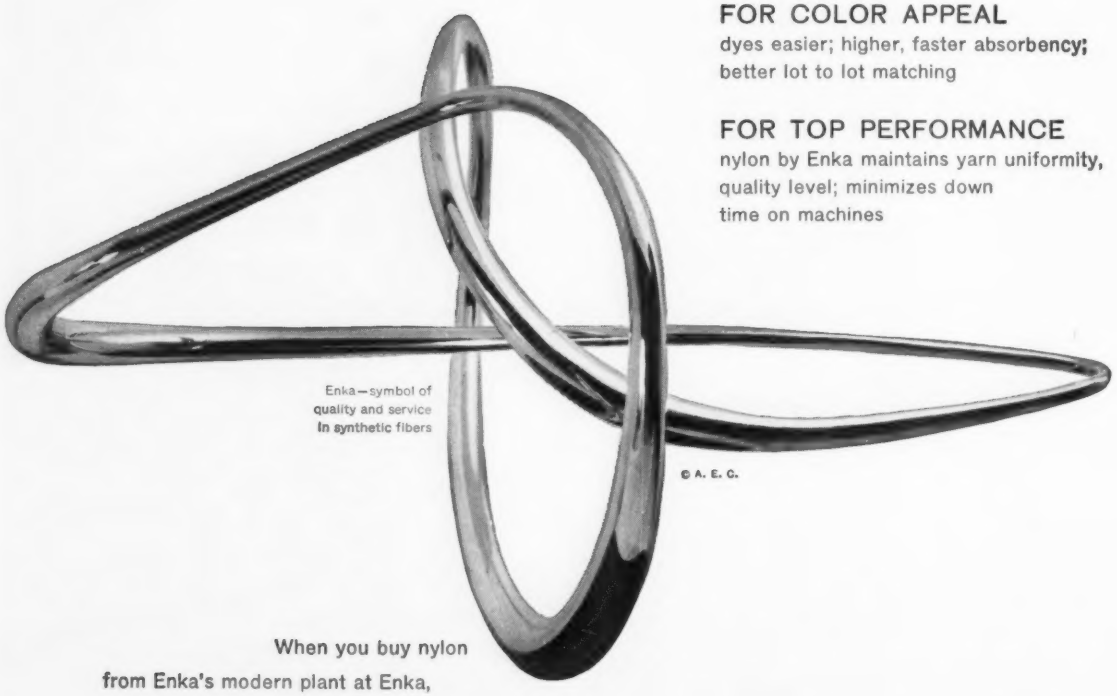

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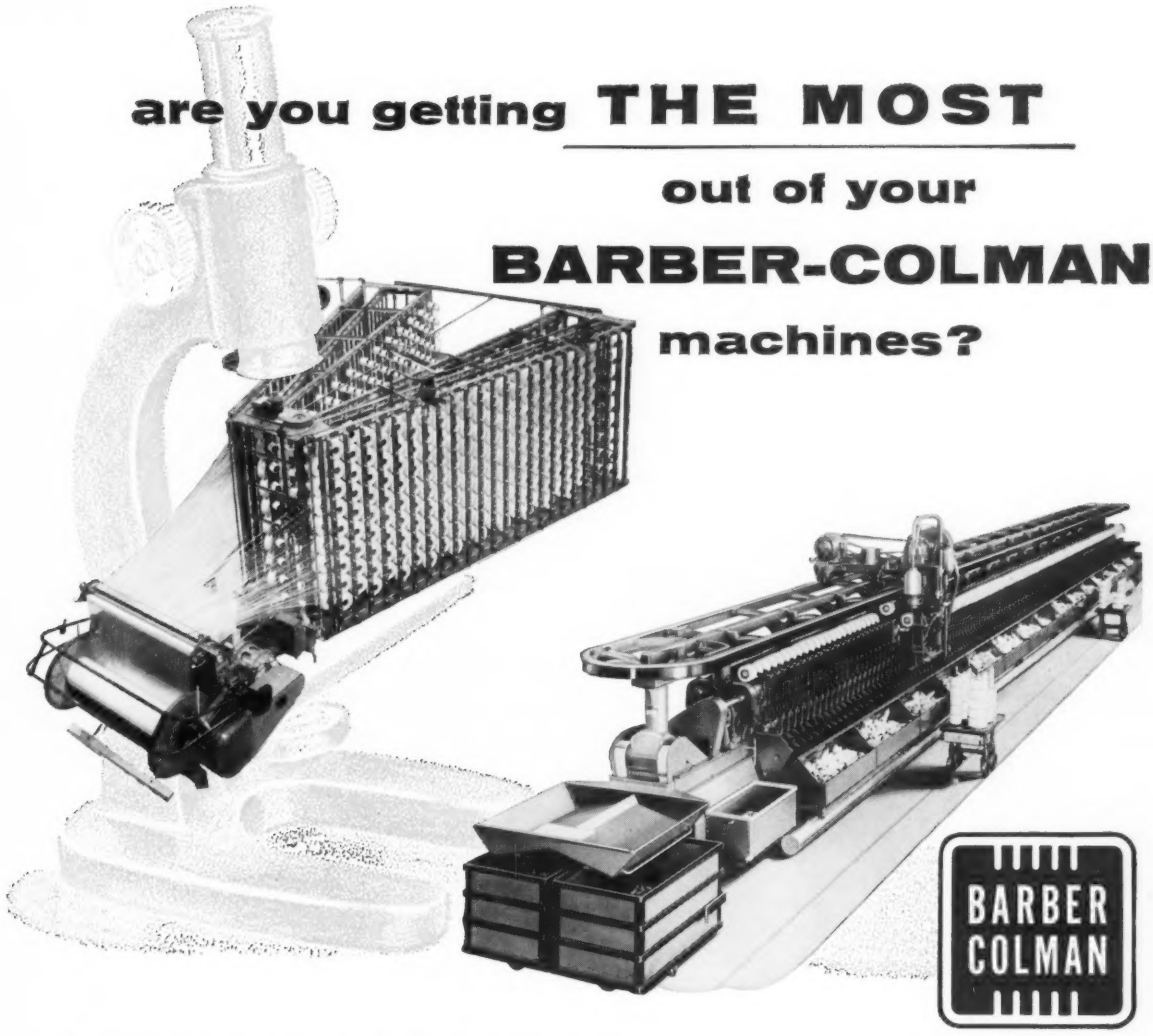

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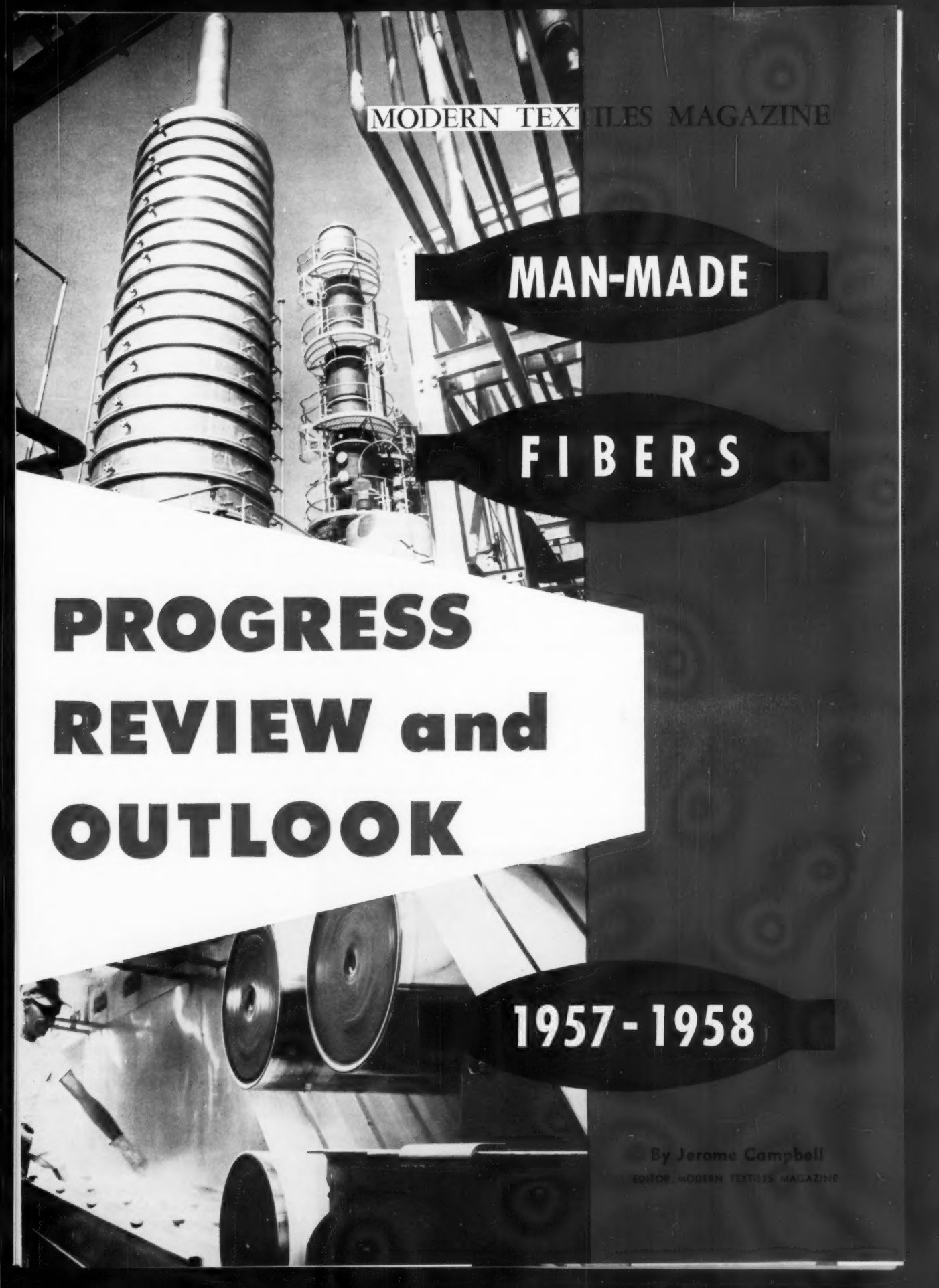


MODERN TEXTILES MAGAZINE

MAN-MADE FIBERS

PROGRESS REVIEW and OUTLOOK

1957-1958

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

NEW TRENDS IN RAYON

industrial uses loom larger

stronger yarn for tires

new uses for staple, specialty yarns

PRODUCERS of rayon filament yarns and staple fiber are currently engaged in a long range reshaping of their marketing policies. This reshaping, a product of an "agonizing reappraisal" of where their markets are and how they can be cultivated profitably, has, in the past six months, begun to yield results. But the basic re-thinking of marketing policies is by no means over; it can be expected to continue well into the future. And the drive to create more successful marketing policies has been sharpened during the past few months by lagging sales and a prevailing tendency to sell many types of rayon yarns at prices well below list—so far below in fact that profit margins have been shaded to paper thinness.

The new rayon marketing practices may be summed up as a policy of "pinpointing" markets. More and more the producers are searching out specific end uses where their yarns and fibers can do an attractively economic job. Then they are turning on these potential markets their salesmen, their sales-service technicians and the whole apparatus of their marketing-merchandising staffs. The crux of the new policy is that no market is too small or too specialized to be beneath their attention. Further to be noted is the fact that many of these new highly specialized end uses are in areas remote from the apparel and fashion fields. Many of them are in industrial end uses or other equally unglamorous "hidden" functions where rayon does a good job unrecognized by consumers such as backing materials for reinforcing plastics, and rubber; in packaging tapes; in industrial hose and belting.

The change in the marketing policies of the rayon producers has been forced on them by brute necessity. These companies, not too long ago, woke up suddenly from a pleasantly euphoric dream in which they saw their steadily expanding capacity, devoted mostly to tire yarn, turning out a product bought at profitable prices by a tire industry working hard to meet an ever-increasing American consumption of auto tires. Every newspaper they read predicted that this was the automotive age and that every American would soon own at least two cars with a consequent infinitely expanding need for tires and rayon tire yarn. Sales in 1954 of 429 million pounds seemed amply to confirm this feeling.

In their dream (which was, after all, only a projection into the future of the state of affairs that prevailed roughly between 1950 and 1954) the rayon producers saw themselves happily having to bother less and less with sales of yarn to the tiresome apparel industry with its dependence upon unpredictable fashion trends. Their tire cord was unbeatable for its purpose (had it not won out over cotton?) and they worked conscientiously in their research laboratories to make it still better.

What shattered this warm dream and woke the rayon people into the bleak light of a frigid new day were 1954 tire yarn figures. They showed that consumption of nylon had jumped to 30 million pounds from 19 million pounds in the previous year. To these disquieting figures was added the realization that about 6/10ths of a pound of nylon was the equivalent of a pound of rayon in tire use.

At about this time the rayon producers also grasped the uncomfortable fact that rayon was not doing well in apparel and home furnishing end uses. The upshot of the realization that their product was slipping

TUNNEL OF COLOR—This striking exhibit in the form of a tunnel lined with carpet was set up by Hartford Rayon Co. to demonstrate the variegated colors and many different textures obtainable with the company's "Kolorbon" solution-dyed carpet rayon available in 8 and 15 deniers.

in virtually all its markets was a determination to fight hard to win back for rayon lost territory, and open up new fields for it to cultivate.

That struggle is now in progress. It is too early to report whether it will be successful. But it is not too early to state that the rayon producers are making gains. As a result of their efforts, it is entirely possible that rayon will gain noticeably in favor among both textile people and consumers in the months immediately ahead.

With regard to tire cord, rayon's biggest market, the rayon producers are breathing easier. They believe they have slowed the switch to nylon. This has been achieved by vigorous action in two directions. The first has been by improving the properties of rayon tire cord so that the gap between rayon and nylon in this respect has been appreciably narrowed. The second course of action has been an increasingly lavish and widespread advertising campaign to inform consumers on the merits of their rayon tires.

In the new marketing perspectives for rayon, industrial uses are well in the foreground. For example, American Viscose Corp., largest producer of rayon, points out that apparel yarn, once the largest segment of its business, now accounts for only 35%. The remaining 65% is in sales to industrial, tire, home furnishings and other markets.

Rayon's industrial uses include conveyor belts, industrial hose, V belts, liner fabrics, filters, twines. An open mesh fabric known as rayon scrim that is woven and bonded in one operation has increased the use of rayon in reinforcing paper and as a barrier material. To make this material the rayon scrim fabric and a cellophane sheet are dipped in wax to produce a greaseproof and waterproof barrier fabric for use in shipping metallic parts and in mothballing equipment exposed to the elements.

In June, American Viscose introduced a new continuous filament rayon yarn possessing greater strength. Tradenamed "Super Rayflex," the new yarn, available in 600 and 800 deniers, is priced at 78 cents a pound, and is said to have 4.5 grams per denier conditioned strength. It is intended primarily for industrial uses, particularly reinforcing applications with laminates involving paper, rubber and plastics.

In August, American Enka Corp. made available a new tire yarn said to be far stronger than its older yarns. Called "Super-Suprenka," the new yarn is currently produced at the rate of two million pounds a year. It is the third improvement in the company's high tenacity yarn since 1953, and is said to give strengths in tire cord 45% higher than yarns available three years ago. The fatigue quality of the new yarn is also very high, and resistance to rupture by impact is greater than that of nylon, according to Enka.

Another new contribution by American Viscose to stronger rayon was the announcement in May of a new high strength staple fiber, "Avisco XL", which the company said is 70% stronger when wet and 40% stronger when dry than conventional rayons. In comparable constructions and weaves, it was claimed that fabrics made with Avisco XL have 25% more breaking strength and 33% more tear strength than cotton. It was also stated that the new "strong staple" is more compatible with non-cellulosic fibers than ordinary rayon staple.

Applications foreseen for the new staple are apparel, industrial uses and home furnishings either alone or in blends with other fibers.

Another new staple fiber also brought out by American Viscose was "Avisco Super L," a rayon

PLAYTIME PRINT—This rayon print blouse with matching shorts does not shrink or lose color in sunlight.

for carpets with special resistance to soiling. Improved bulking properties enable this fiber to give improved texture to looped carpet constructions.

Also specially engineered for carpets was a new solution-dyed staple fiber with greatly improved characteristics of harshness and crimp introduced by Hartford Rayon Co. The new fiber is available in 8 and 15 deniers and 15 colors. Special fiber blending techniques developed by Hartford utilizing the broad range of colors of its fiber have resulted in new shades and mixed color effects never before available in carpets. Hartford's new fibers are also making gains in drapery and upholstery fabrics.

In general, rayon staple fiber continued to be one of the most dynamic areas of rayon marketing. At a recent conference in New York of the National Cotton Council, M. K. Horne, Jr., the Council's chief economist, said that virtually all large cotton mills are using rayon staple fiber today. Exactly how much and in what way they are using it is hard to ascer-

THAT SILKY LOOK—American Bemberg nubbi rayon yarn combined with combed Egyptian cotton provides the fabric for a washable sport shirt that has the look of silk.

THE COLOR'S BUILT-IN—Courtaulds' solution-dyed rayon staple is used in these draperies and matching bedspread. Although the fabrics have the shimmer of silk, they can be washed as easily as cotton.

tain. In 1956, the tufted floor covering industry, one of the biggest customers for rayon staple, consumed 88 million pounds. Another 242 million pounds were consumed in making spun yarns on the cotton system. Other uses which account for considerable poundage of rayon staple are flock, nonwoven fabrics, packings, sanitary and surgical applications, and tea bags.

Indicative of the bullish outlook for rayon staple is the fairly continuous expansion of productive capacity in the past few years. Capacity is now 433 million pounds annually, including the new 63 million pound plant opened by American Enka Corp. at Lowland, Tenn. Capacity is expected to climb to 547 million pounds by the end of 1958 if present expansion plans of the producers are not abandoned.

With this substantial capacity for rayon staple to spur them on, yarn producers continued their efforts to increase consumption in standard all-cotton constructions which each year account for vast yardages of apparel fabrics. By trade displays, American Viscose sought to create greater interest among cutters of house dresses in use of cotton-rayon blends.

Solution-Dyed Staple Progress

American Viscose introduced solution-dyed rayon staple in January, and available colors now number 15. The company also offers solution-dyed carpet staple in semi-dull luster. Courtaulds continued its vigorous efforts to increase the uses of its broad color range of solution-dyed staple. In the months ahead, a greater variety than ever before of solution-dyed rayon staple both in blends with cotton and in the 100% form will appear in women's and men's wear in retail stores. These fabrics will be products of virtually all leading mills including Stevens, Burlington, Cohn-Hall-Marx and Lowenstein.

In knitwear, solution-dyed rayon staple has been combined with combed cotton in a 66-34% blend by Slane Hosiery Mills to produce men's patterned socks with bright washfast colors and remarkably soft hand. Slane is also making stretch socks combining nylon, cotton and solution-dyed rayon.

In auto upholstery, solution-dyed rayon staple continued to improve its strong position. Courtaulds reports that Chrysler, Ford, General Motors and Studebaker-Packard use these fabrics in their current models. The advantages of solution dyed rayon staple in this end use are its brilliant colors that are extremely resistant to fading from sunlight, moisture, fumes and gases as well as strong cleaning fluids.

Meanwhile, in curtains and draperies, Courtaulds reports encouraging advances for it rayon staple with built-in color. More than 25 drapery converters will have in their lines this autumn fabrics made with "Coloray", Courtaulds' name for its solution-dyed staple. The fabrics will range from full-bodied tapestry types to sheers.

Gains in the drapery field for rayon are also being made by American Bemberg, the only manufacturer of cupramonium rayon in the United States. Bemberg draperies, especially finished to prevent creeping, are presently being marketed by two leading converters. The special finishing process on these draperies involves resinating, which controls the swelling of the fiber. This treatment makes the Bemberg draperies more impervious to atmospheric changes, much like the newer hydrophobic fibers, while losing none of the special esthetic appeal of Bemberg yarn.

Silicone Finished Bemberg Yarn

Another Bemberg development that has been worked out for the home furnishings field is a direct dyed, silicone finished, high turn warp yarn. It was developed in response to the need of the upholstery trade for a loom-finished fabric that will permanently resist spotting. The silicone finish on the yarn also contributes improved hand and better sewability. Its success on warp yarns is now leading to use of the finish on filling yarns for upholstery cloth.

For upholstery fabrics, another new development which shows great promise arises from the special dyeing characteristics and exceptionally high affinity of Bemberg yarn for selected direct dyes. By combining Viscose and Bemberg in piece-dyed combination fabrics, unusual color contrasts and special effects are being obtained. These color effects make possible substantial reduction in costs by replacing more expensive fibers used hitherto. Also obtained is an improvement in color fastness.

In womenswear fabrics, the revival of crepes, chiffons and similar soft fabrics, long predicted, actually took place in a substantial way. Demand for crepes in the dress trade remained strong throughout the winter and spring, but fell off with warm weather. It is expected to revive in the fall. Fine denier rayon filament yarns, of course, are the fibers most widely used in these constructions along with acetate. Whether the crepe revival will grow until it becomes a really basic style trend sweeping the entire field of women's daytime dresses remains to be seen: up to the present the crepe revival has not reached anything like these proportions.

In both men's and women's fashion fabrics, the heavy use of American Bemberg's specialty yarns continued. American Bemberg recently broadened the applications of its "shantung"-like slubbed yarn, Cupioni, and Strata, a thick-and-thin yarn, by bringing out these yarns in solution-dyed form with a full range of colors. These solution-dyed colors are intended for garments where maximum lightfastness and washfastness are required as in sportswear. The company is also supplying vat-dyed Cupioni yarns.

In men's summer suitings filament rayon is making significant gains. A new cord suiting of Dacron, Du Pont's polyester fiber and American Enka's Jetspun, solution-dyed rayon filament yarn, woven by Rutger Fabrics Corp., will appear next year in men's warm weather suits. These suits will be washable at 160°F., it is said. Use of the fabric in women's and children's garments is also planned. For the coming summer-wear season, Rutger is also bringing out another new cord suiting, "Cordoni", a blend of rayon, acetate and nylon with Bemberg's Cupioni rayon yarns used to give a luxurious slubbed effect. Other men's suitings which make use of Cupioni are a wash-wear fabric of Dacron and cotton with Cupioni, and a silk-like suiting of cotton, acetate and Cupioni.

Progress by Fortisan

Fortisan and its companion Fortisan-36, special types of strong rayon yarn produced by Celanese, made substantial gains during the past 12 months in a number of new fields, largely industrial. Celanese recently reported in its latest technical bulletin that Fortisan-36 had a new wet tenacity 10% higher than previously announced.

In November, the company announced the availability of Fortisan-36 in 270 and 300 denier at $2.30 and $2.05 a pound respectively. The new deniers meet the requirements of the packaging industry for reinforcing packaging tapes and papers and of weavers for scrims and light-weight vinyl laminates.

Fortisan-36 webbing used in tents by the Quartermaster Corps permits a stronger structure at lighter weight. Fire hose containing Fortisan-36 has been listed by Underwriters' Laboratories. Other major uses for Fortisan-36 include V-belts, electrical core threads, tarpaulins, duck reinforcing and safety belts.

What's Ahead for Rayon

It is entirely possible that the next year or two may see a bright renascence for rayon as an apparel and home furnishings material. The atmosphere already seems ripe for such a revival of this fiber, which in staple and filament form has a formidable list of virtues already well-known to consumers.

LETS LIGHT IN, KEEPS RAIN OUT—This translucent hatch tent of vinyl reinforced with Celanese's Fortisan-36, allows loading and discharging of steamship cargo in inclement weather.

Factors which may contribute to the revival of rayon are the growing trends toward crepes and chiffons in womenswear; the tremendous style potential of solution-dyed rayon staple in spun yarn fabrics; the increasing use of improved rayons such as American Enka's Jetspun filament yarns and American Viscose's new "strong" staple, Avisco XL. The revival of rayon may also be helped by the smartness given to fabrics by such specialty yarns as American Bemberg's Cupioni and Flaikona.

Contributing mightily to the brighter outlook for rayon are the promotional efforts of the American Rayon Institute and individual yarn producers. In this connection a special word should be said about the plan of the American Viscose Corp. for upgrading rayon fabrics which is now being carried out on a tremendous scale. Taking Standard L22 of the American Standards Association as its minimum standard for finishing rayons, the company's plan provides for licensing finishers and converters.

Fabrics turned out by the licensees are regularly checked by American Viscose for conformance with the standard. For those that measure up, "Integrity" tags are provided for the garments and other items into which these fabrics go. During 1956, more than 3 million such tags where issued for apparel, more than 600,000 for bedspreads, and more than 25 million square yards of carpeting was produced to qualify for the tags. During 1957, American Viscose expects to issue about 15 million "Integrity" tags.

Meanwhile, recent progress in basic research promises to lick rayon's great weakness, shrinkage in laundering. Rayonier, producer of cellulose for rayon, reports success in its efforts to produce rayon fibers that will have "built-in" resistance to shrinking. In fact, a company spokesman says "new completely washable rayons are just about here." The new launderable rayon is expected to open for this fiber volume use in sheets, towels, shirts and many other fabrics where washability is required.

THE "SOFT" LOOK BACK AGAIN—This all-rayon chiffon is an outstanding example of the new popularity of chiffons, crepes and georgettes in women's dresses.

comers and established producers are working hard to open new uses for nylon and to expand its consumption in textile products where it is already doing well.

Du Pont is building a new nylon plant at Richmond, Va., which is expected to begin production late this year. Capacity of the new unit will be 40 million pounds and it will be exclusively 840 denier intended for tire cord. Chemstrand is expanding capacity at its Pensacola, Fla., plant so that the plant will be capable of turning out 114 million pounds a year by next spring.

NEW TRENDS IN NYLON

renewed use in fashion fabrics
carpet applications increase
tire, industrial uses gain

CURRENTLY, nylon is enjoying an extremely strong position among man-made fibers. The two leading producers, Du Pont and Chemstrand, are sold up and working on substantial expansions of plant capacity. Other producers, more recent entrants in the nylon market, such as Allied, American Enka and Industrial Rayon, report good progress in obtaining commercial acceptance for their fibers. Both new-

A more recent producer of nylon, American Enka Corp., has announced expansion of its nylon 6 capacity at a cost of more than $5 million. The new facilities will nearly triple Enka's output of fine denier nylon textile yarns. Overall nylon capacity of the company will be increased approximately 75%.

Total output of nylon today by all U. S. producers is estimated to be in excess of 300 million pounds. With additional capacity that will come into production during the next 12 months, production of nylon in the near future will push toward the 400 million pound mark. As it is, nylon production is catching up with acetate and will probably pass this cellulosic fiber this year, making nylon second only to rayon in poundage produced. Incidcntally, it is estimated by industry sources that only about 10% of total nylon output is staple fiber.

One of the features of nylon's present strength—in strong contrast with last year's slump for this fiber—is the revived use of nylon in many apparel fabrics. Nylon is sharing the benefits of the revival of "soft" fabrics in womenswear fashions. A number of mills have brought out attractive and serviceable all-nylon chiffons and georgettes. The new chiffons come in a wide variety of effects. There are prints on dark grounds, tweedy effects, florals, tailored stripes and polka dots. Colors also are varied running from light pastels down to deep browns, navys and blacks.

Among the mills that have brought out these fabrics are American Silk Mills with a nylon-silk chiffon available in 40 colors; Cohama with a chiffon of silk and rayon as well as an all-nylon georgette. Fabrics by Joyce has a line of discharge-printed nylon chiffons as well as 200 screen printed designs. William Skinner & Sons has an all-nylon georgette slightly more opaque than chiffon. The fabric which comes in 30 colors is woven on silk looms by a patented Skinner process using highly twisted nylon yarns

NYLON IN HIGH FASHION—A 100% nylon lace fabric produced by Native Laces & Textiles, Inc., is used in this dress designed by Givenchy for Du Pont.

to give a crepe-like hand. Bloomsburg Mills has a nylon georgette in 20 colors.

Nylon's easy-care properties continued to help its expansion in children's dresses and in outerwear fabrics such as snowsuits. Also, nylon's use is increasing in taffeta shell fabrics for a wide range of zipper jackets for men and boys. Heavier jackets for extreme cold weather wear combining a nylon taffeta outer shell and nylon fleece lining, such as a new line made by McGregor-Doniger, Inc., are expected to sell strongly this fall and winter.

Expanded use of nylon staple fiber in blends is expected from Du Pont's introduction in July of "nylon 420", a new high tenacity staple with a low elongation at break. This characteristic is said to make the new staple a good "working partner" with cotton and rayon. In basic work clothing twills, the new nylon is used as a fortifying fiber in warp yarns which, on the surface of these fabrics, take most of the abrasion. Wear tests of pants containing 25% of 420 nylon in warp yarns are said to have resulted in 70% improvement in wear life. Use of the nylon added only 25% more to the retail price as compared with equivalent all-cotton pants. In spun rayon fabrics for men's and boys' slacks, suits and jackets, 15% of nylon 420 in warp and filling yarns is reported to have increased wear life by 70% over all-rayon fabrics of the same weight and construction.

An important part of the nylon revival has been its return to volume use in women's sweaters. Nylon yarns, "texturized" for greater bulk by various processes, have caught on with sweater manufacturers, capturing from Orlon and wool a sizable part of this market.

Color in Nylon Hosiery

In women's hosiery, both full-fashioned and seamless, nylon remained the only important fiber. The producers of fine denier filament nylon for this end use strove by vigorous advertising campaigns to get women to buy more stockings. As part of this campaign, the greater use of color in sheer hosiery was stressed in the hope that women might be induced to enlarge their wardrobes of stockings if a greater variety of interesting colors were available. The weakness of this effort, of course, is the extreme sheerness of women's hosiery today which makes it hard for colors to show up as anything more than light tints.

A new development in women's nylon hosiery is the increased production by American Enka of filament yarns for this end use. Enka recently began manufacturing yarns of 10, 15 and 20 deniers, each with 2 filaments for women's full-fashioned and seamless hosiery. The company states that the new 2-filament yarns offer longer wear, better fit, a more silk-like hand and a duller appearance than monofilament yarns of the same denier. The 10-denier yarn is $8.70 a pound; the 15-denier $5.50; the 20-denier $4.60.

Nylon producers are competing strenuously with each other to carve out a substantial share of business in the big end use of floor coverings. Nylon's toughness, resiliency, resistance to abrasion and thermoplasticity are among its properties which, nylon people believe, make it an outstanding fiber for carpets at a time when good carpet wools are extremely scarce. Stepped-up development is resulting in an increasing variety of textures and attractive style effects in all-nylon and nylon blend carpets.

TIRED TIRES—In an aggressive effort to further nylon's use in tires, Du Pont carries on intensive wear testing at its new industrial products research laboratory. Here a technician is measuring to determine tire dimensional changes after running on a test wheel.

To speed the acceptance of its nylon in carpets, Industrial Rayon has carried out extensive tests to determine effects of wear and soiling and to find effective ways to control static and remove stains from nylon carpeting. (*For a full report on these tests, see MTM, Oct., Nov., Dec.,* '56 *and May,* '57.) Allied Chemical & Dye Corp. has taken the lead in carpet development work making use of high denier filament nylon "texturized" for greater bulk and for more interesting surface effects. (*For a detailed report on these techniques see MTM, Aug.,* '57.)

Progress in Industrial Uses

In industrial uses, one of nylon's most important markets, the fiber is forging steadily ahead. Tire cord, of course, is the number one industrial use for nylon. Here the pace of progress is set by Du Pont, nylon's originator and still the largest producer. Du Pont has as its aim nothing less than a capture for nylon of the major if not the entire portion of this big market. This aim, of course, is shared by other nylon producers. The two bigger nylon producers, Du Pont and Chemstrand are already selling substantial poundages of their nylon 66 yarn to tire manufacturers. Industrial Rayon reports that it is evaluating in field tests its caprolactam nylon (nylon 6) for tire cord and other industrial end uses. Another producer of caprolactam nylon, Allied Chemical, states that it is supplying tire manufacturers with 840 denier high tenacity nylon for testing in truck, bus, off-the-road and passenger car tires. Preliminary reports are said to show highly satisfactory performance.

Whether nylon will replace rayon in passenger car tires remains to be seen. Du Pont points out that nylon already has replaced rayon in airplane tires;

PROTECTIVE COATING—This utilitarian coverall for outdoor activity is made of nylon with rubber lining.

that 30% of the country's trucks and busses are using nylon, and that more and more replacement passenger car tires are nylon. Use of nylon tires as original equipment on new cars is also gaining, but not as rapidly as some of nylon's advocates expected. (*For a comprehensive picture of nylon's current penetration of the tire market, see MTM June,* '57.)

Another increasing industrial use for nylon is rope for towing, mooring and similar maritime functions. Nylon's greater strength over manila permits use of thinner, lighter rope with big savings in storage space and labor in handling. Nylon rope lasts much longer and is thus more economic in the long run than manila rope. In recent months, rope makers have developed special techniques for manufacturing nylon rope with consequent improvement in the performance properties of these ropes. (*See MTM April,* '57.)

The use of nylon in rope has been accelerated by the availability of nylon filament yarns in heavy deniers from Du Pont and Allied. For industrial uses, Du Pont has a range of six denier classifications from 2520 deniers, 420 filaments up to 15,120 deniers, 2520 filaments. Allied, which has been especially active in the field of nylon heavy yarns, recently added seven new deniers and filament counts to its range of heavy deniers running from 2100-408 to 15,000-2448. For the fabric manufacturer, these heavy yarns make plying unnecessary, thus cutting processing costs.

Allied states that its heavy yarns have many uses —in industrial applications, in draperies, and in upholstery for autos and furniture. Among the industrial uses are braided cords, seine twines, webbings, auto safety belts, and hoisting slings.

After tire cord, probably the most important industrial use for nylon in terms of growth potential is the variegated field of coated fabrics used largely for protective purposes. Starting with truck covers, this application of heavy denier nylon yarns has spread rapidly. Athletic field covers, circus and theater tents, tents for grain storage, covers for military and industrial equipment exposed to the weather, temporary shelters for linesmen and others working outdoors—all are uses for these fabrics.

Now a new use for coated nylon fabrics is emerging: inflated structures for storage and shelter. These "pneumatic buildings" are simply coated nylon tents without any support other than air pressure maintained constantly inside the structure by an air blower. Advantages of coated nylon covers and tents —the coating is usually vinyl or neophrene—are high strength, light weight, impermeability to water, resistance to damage from rot and chemicals, and consequent much longer useful life than cotton duck.

Nylon heavy duty sewing thread, particularly for shoes, is another industrial use that is gaining. A wear test made this year on shoes worn by children from 9 to 14 showed that nylon greatly outlasted cotton. Last but not least interesting in new uses for nylon, Chemstrand reports that improved types of the "no-kink" braided nylon artery developed last year in its laboratories are said to be installed in the circulatory systems of more than 500 humans, helping them stay alive.

The Outlook for Nylon

Nylon, it can safely be said, has reached its maturity as a major man-made fiber. Production this year is expected to outstrip acetate considered up till now the number two fiber after rayon, measured in pounds produced. Of the dozen major fiber producers in the United States, five produce nylon, and a sixth, American Viscose, owns a half interest in Chemstrand, one of the five nylon producers.

Since it began to search for end uses at the close of World War II, nylon has had its ups and downs, its major triumphs such as hosiery, and its minor disasters such as men's shirts. As time goes on there is less and less misuse of nylon and more and more carefully engineered penetration of end uses where it does a better job than some other fiber.

Now it would seem that the outlook for nylon is one of steady if unspectacular growth in end uses already opened for it and new uses yet to emerge. Of significance is nylon's renewed gains in apparel, especially fashion wear. It seems from the increased production this year of pretty nylon chiffons and georgettes that the new "soft look" in dresses can benefit nylon as well as rayon and acetate.

In the months ahead watch for further nylon gains, both as staple fiber and texturized filament yarn in floor coverings and upholstery cloths. Expect more use of bulked and crimped nylon yarn in sweaters, in blouses, dresses and children's wear. Look for advances of special nylon staple fiber such as Du Pont's "nylon 420" in blends with cotton and rayon in men's work garments and boy's wear.

In industrial end uses, expect nylon to gain wherever its unique qualities of high strength, great extensibility and resistance to adverse wear conditions make it more economic than another fiber—such as in ropes, heavy duty twines, protective coverings, webbings, and sewing threads.

LIGHT AND AIRY—These Edwardian cafe curtains are made of Celanese's solution-dyed acetate and Fortisan.

NEW TRENDS IN ACETATE

crepe revival watched hopefully
Arnel's acceptance broadens
acetate revived for carpets

ACETATE producers, heartened by the current revival of crepes, are hoping that this trend will swell to major proportions for fall, 1958, and that it will lead to a general revival of the luxurious, silk-like fabrics that are acetate's strong point. In the opinion of acetate's spokesmen, a broad fashion ground swell helpful to acetate is long overdue. Few will deny that this fiber, which has so many fine textile qualities, has been buffeted in recent years by adverse tides and stormy weather in the world of fashion. Annual output of acetate filament yarn dropped over 100 million pounds between 1951 and 1956. The turn of fashion toward "softer" fabrics, including crepes and chiffons, it is hoped, will mark acetate's initial steps on the long hard road back to where annual production will top the high point of 326.6 million pounds of filament yarn in 1950.

Meanwhile, the acetate picture is complicated by the growing importance of Arnel, Celanese's triacetate fiber, which is receiving the most emphasis in this company's marketing and development efforts. *(A special section devoted to Arnel will be found at the end of this report on acetate).*

Solution-dyed acetate yarns continued to be one of this fiber's major selling points. Celanese broadened its offerings in these yarns by bringing out a 200 denier thick-and-thin yarn intended for light-weight but definitely textured cloths. The yarn's versatility, Celanese said, permits its advantageous use in both apparel and home furnishing fabrics, particularly fabrics subjected to maximum exposure to sunlight and laundering. The yarn can be used for both warp and filling.

Du Pont this summer started commercial production of type 20 bright acetate filament yarn in 75 and 150 deniers. Type 20 acetate, possessing a Y-shaped cross section, becomes crimped when put in hot water. It thus provides interesting bulking effects when it is woven into fabrics. Depending upon the type of fabric and the finishing methods, an increase of bulk up to 30% is said by Du Pont to be possible with Type 20 acetate. To make use of this fiber's bulking properties, Du Pont recommends lower constructions than generally followed for acetate fabrics. Reductions of about 8% in the sley and 10% in pickage are recommended. Type 20 acetate is priced the same as ordinary acetate.

A new acetate filament yarn was also announced in August by Celanese. Called "Type-F", the new yarn has a Y type cross section. Available in 75 and 150 denier, it has been developed specifically for drapery and bedroom ensembles. It is said to provide a richer body, and greater luxury of hand.

The unparallelled capacity for solution-dyed acetate yarns to resist fading from sunlight and from exposure generally continued to accelerate their acceptance in draperies and other home furnishing fabrics. In this end use, Celanese broke new ground by establishing a policy of guaranteeing "initial suppliers" of draperies and curtains made with its solution-dyed yarns against losses due to fading of the fabrics in use. Eastman soon announced a similar policy. Another new development in solution-dyed yarns was the introduction by Celanese of a new, more vibrant red.

Also in the field of home furnishings, Eastman and Celanese both showed revived interest in providing fibers and yarns for carpets. Celanese introduced a special carpet acetate which, blended with nylon, was shown in carpets exhibited at the January Home

CREPE IS BACK—This overblouse-dress in the manner of the 30s, is made with a crepe of acetate and rayon.

Furnishings Show in Chicago. This special acetate can be twist set for practical application in textured and frieze type carpets when combined with wool and nylon.

Tests made by Celanese show that the new carpet fiber contributes properties of permanent texture, resistance to matting, improved resiliency and easy cleanability. Dyeing can be done either in raw stock or in the piece. Celanese points out that the new acetate fiber can be blended with nylon and heat set as yarn before dyeing without loss of the frieze textured effect. Producers of such carpets may have the economic advantage of weaving them in the gray and holding them in inventory to be piece-dyed later in accordance with customers' color requirements.

In line with the new trend toward increased use of texturized heavy denier filament yarns in carpets (See MTM, Aug. '57) Eastman introduced lofted solution-dyed acetate yarns for floor coverings in deniers of 2200, 2700 and 5300. The yarns come in semi-dull natural color and in a range of solution-dyed colors. Eastman claims for these carpet yarns advantages of greater resistance to matting and packing in traffic areas; superior resistance to soiling when compared with other man-made fibers, and ease of cleaning without pilling. Also cited as an advantage of these yarns, when the solution-dyed types are used, is outstanding color fastness and uniformity of shade from selvage to selvage and roll to roll. Among the first mills to introduce carpets made with these yarns were Roxbury Southern and Callaway.

Eastman also reports that use of finer denier lofted solution-dyed acetate yarns has increased substantially in menswear during the past few months. A number of shirt houses are using novelty stripes and plaids in their sport shirt lines and several robe houses are introducing fall and holiday merchandise, all made with fabrics woven of these yarns.

Lofted acetate fabrics in a variety of weaves are prominent in junior back-to-school lines, women's fall dresses and children's wear. Lofted acetate yarns, both solution-dyed and natural, have made gains in the home furnishings field. Solution-dyed, these yarns are already well-established in fabrics for draperies, bedroom ensembles and upholstery. More recently, they have been used successfully in a new line of casement cloths.

Celanese brought out two new types of acetate staple fiber for use in stuffing mattresses, for upholstery, quilts and similar end uses where loft and resiliency are required. The first of these, tradenamed "Celacloud", formerly designated "Type F", is available in 5.5, 8, 12 and 17 deniers per filament. Tests made by Celanese show that Celacloud provides a maximum increase in loft up to 52% above that of ordinary acetate. Advantages claimed for Celacloud include absence of dust or lint, excellent resilience, warmth combined with light weight and minimum matting and lumping. The fiber is also non-allergenic, resistant to mildew and water-repellent.

In June, Celanese announced "Celafil", a modification of Celacloud, specially intended for pillow and comforter filling. Celanese points out that the fiber will sell for roughly one-third the cost of virgin acrylic and polyester fibers which have been used widely in recent years as pillow and comforter filling.

Celanese will sell the fiber as "Type K" staple and will license pillow and comforter manufacturers to use the Celafil trademark on tags and labels designed and authorized by Celanese. The license agreements will fix minimum product specifications and will stipulate that Celafil labels may be used only for these two end products and only when Celafil is not combined with other fibers. Such agreements have already been made with a number of pillow and comforter manufacturers.

Early this year, Eastman introduced a new acetate yarn, "Eastman 50", characterized by hollow or doughnut shaped filaments. The relatively round smooth surface of this yarn is said to result in 15% greater luster and from 5 to 10% greater bulk, giving the resultant fabric a smooth, full hand. This yarn will appear in white and ivory peau du soie fabrics in most major bridal lines for the coming fall and winter. It is said that Eastman 50 yarns give these fabrics unusual soft highlights and improved draping qualities.

The new yarn is also being used as a warp yarn in opaque drapery fabrics. For example, D. B. Fuller employs it in the warp of a satin back drapery ground cloth that has a novel 96 inch panoramic print applied. Eastman 50 yarn is also being used extensively in taffetas for bedroom and shower curtain ensembles.

Arnel's Advances

In the past year, Celanese's efforts to make Arnel, its new triacetate, a big volume fiber and a strong contender in the great "ease-of-care" sweepstakes reached the stage of widespread advertising to make consumers aware of the fiber's merits in apparel.

Arnel's major successes to date have been in tricot, sharkskins, failles and Arnel-cotton combinations. Among these, the sharkskins, in 100% Arnel constructions, have been notably well received by consumers, and it is expected that these fabrics will be in strong demand for spring and summer, 1958. Combined with cotton, Arnel has been introduced in broadcloths, poplins, twills and sateeens. The good initial reception of these "ease-of-care" fabrics leads

Celanese to expect that they will attain high volume production next year. Another new fabric is an Arnel-rayon crepe which is expected to figure prominently in the strong crepe revival in womenswear now well under way.

Measured in terms of promotional drum-beating, probably the most notable of the new fabrics containing Arnel is a brushed knit cloth of 80% Arnel and 20% nylon made by William Winkler and tradenamed "Vocama". Available in solid colors printed patterns and stripes, the cloth will appear in the fall collections of no less than 68 American designers and France's Dior. In the months ahead Vocama will reach consumers in virtually every type of apparel from "baby booties to bathing suits". Specifically, it will be available in women's dresses and sportswear; in negligees, robes and lingerie; in blouses; in coats and suits; in handbags and accessories. It will appear in infants' and children's wear; in toys, and in men's sportswear and robes. To alert consumers to the fabric, a big advertising program will get under way with a four-color, two-page spread in Life Magazine, Sept. 9 to be followed by extensive advertising in women's magazines, newspapers, store displays and TV.

In menswear, Nashcombe has brought out a nubby slacks fabric which combines Arnel, rayon and silk in a machine-washable garment that needs little pressing. Waitress's uniforms of Arnel jersey are said to be popular because they combine smartness with easy washing and quick drying properties with little or no ironing needed.

Increased use of Arnel in tricot knitwear was foreseen as a result of a new finishing process that imparts permanent anti-static properties to these fabrics. The process, developed in Celanese's laboratories, created a skin of cotton-like cellulose around each Arnel filament. This skin, constituting an integral part of the fiber, is not removed by laundering or wearing. Since static is a surface effect, the water-absorptive properties of the cellulose surface of Arnel treated by the new process have anti-static properties similar to cotton. More than 5 million yards of tricot have been already finished by the new process which Celanese makes available to commercial finishers.

What's Ahead for Acetate

Solution-dyed yarns will continue to be one of the most fertile areas for increased use of acetate. Drapery and curtain manufacturers will increase their use of these light fast yarns both of the conventional type and in new lofted forms.

More carpet manufacturers can be expected to bring out fabrics of lofted heavy denier acetate filament yarns. But the achievement of volume status for these yarns will depend upon consumer acceptance of carpets made with them.

Arnel, by virtue of its real merits as a textile material, and helped by the support of the enormous promotional pressure Celanese is putting behind it, can be expected to move forward rapidly in the fashion field. Arnel sharkskins, which have already proved themselves, will continue to gain popularity and may in time become one of the strongly established fabrics for womenswear, in good demand season after season.

Arnel combined with cotton in a broad variety of "ease-of-care" garments for both women and men, will forge ahead steadily.

A CLOUD IN HAND—These acetate staple fibers in the form of resilient batting are sold for mattress filling under the Celanese tradename, "Celacloud".

FIBERFRAX CERAMIC FIBER

Fiberfrax ceramic fiber, produced by the Carborundum Co., Niagara Falls, N. Y., is an aluminum silicate material that is said to withstand temperatures in excess of 2,000°F. It is available as roving, yarn, cord, rope, woven tape, broadwoven fabric and other textile forms.

Fiberfrax yarns are made from a blend of approximately 85% ceramic fiber and 15% organic carrier fiber. The yarns are available in both singles and plied forms.

Fiberfrax fabrics come in a wide range of weights from 15 to 74 ounces a square yard, and are made in a variety of weaves and constructions. They are said to be outstanding for their insulating properties due to low thermal conductivity, high yarn bulk, natural resilience and small fiber diameter (average about 4 microns.)

Some constructions are inserted with stainless steel or nickel-chrome alloy wire for greater tensile strength in the 1000° to 2000°F range. Fiberfrax fabrics coated with certain impervious high-temperature-resistant compounds or laminated with metal foils offer excellent potential as easily fabricated insulating and fire wall materials for aircraft, and similar uses.

The roving and yarn are available in size ranges of 600 to 1000 yards a pound. These products are finding use as insulation for electrical circuits that must withstand very high temperatures. Rope ranging in diameter from ¼" to ¾" is being used as insulation and packing in various metallurgical refining processes.

Current and anticipated uses of Fiberfrax cloth and tape include insulating blankets and wrappings, gaskets, filter media, protective clothing, conveyor belts, various kinds of heat and flame barriers and membranes, and other high temperature applications where a flexible sheet material is required.

NEW TRENDS IN ACRYLICS

expansion in woven fabrics
orlon, acrilan blankets gain
dynel uses broaden
verel reaching consumers

ORLON

FOR ORLON today the key word is diversification. Having established Orlon as the dominant fiber in women's sweaters, Du Pont now seeks to push the fiber into other end uses so that it will not be entirely dependent on the changing trends of the women's knitwear field. As a result of Du Pont's vigorous cultivation of new end uses for its acrylic fiber, Orlon is finding growing acceptance in blankets, women's coatings, dresswear, blouses, in men's socks, slacks, sport shirts and even suits. It is also being increasingly used in children's wear.

Current production of Orlon is running at about 70 million pounds a year. When a new plant now being built at Waynesboro, Va., is completed, Du Pont will have an Orlon capacity of more than 100 million pounds annually.

Early this year, Du Pont brought out Orlon staple fiber and tow with better whiteness and improved dyeability with cationic dyes. The improved Orlon has a saturation value increase of 30% so that a greater amount of dye can be applied. Also, the improved Orlon absorbs cationic dyes at 30% greater speed. Orlon's improved dyeability permits better results in deep shades, particularly when the highest attainable dyeing temperature is 205°F.

The availability of a more dyeable Orlon has had an immediate impact on the fiber's end uses. Women's sweaters have appeared in brighter, more diversified colors. Also, in sweaters there has been a growing trend to blend Orlon with fur fibers in a 85-15% ratio. In other sweater trends using Orlon, black-solution dyed Orlon combined with white offers interesting styling effects in checks, heathers and stripes as well as multi-colored patterns.

Bulky-knits made with Orlon are one of the strong style movements in women's sweaters. The variety of these garments is increasing. Many are available in casual styles for home and sports wear. Others are for more dressier occasions and include bulky-knit coats in several lengths. There are also tweed-patterned sweaters that match or blend with skirts in a broad spectrum of color effects. New crepe yarns, boucles and thick-and-thin yarns of Orlon also add to the widening style possibilities achieved with this fiber in women's knitwear. There are also screen-printed sweaters, and sweaters knitted with Orlon and nylon crimped by the Ban-Lon process to give textured surfaces.

Orlon is also making notable progress in men's knit garments and has made a substantial contribution to the revival of sweaters for men. Output of men's sweaters, coincident with the penetration of Orlon in knitwear, has risen from 1,440,000 dozen in 1954 to 1, 950,000 dozen last year. Introduction by Du Pont of six and 10 denier yarns has helped this revival. Among the new types of sweater styles in menswear are garments knitted with curled yarn similar to alpaca, a lofted type similar to shetland and heavy knit sweaters popular among students.

Going beyond its initial success in knitwear, Orlon is being used successfully in more and more woven apparel fabrics. Orlon-rayon blends in a 75-25 proportion have led to a revival of white flannels in resort and summer wear, helped greatly by the easy washability and drycleanability given these garments by Orlon.

A promising newcomer in men's summer suit and slack fabrics is Burlington's Dacron-Orlon cloth in four new patterns. The fabric has a crisp hand, is cool to wear, and has good wash-and-wear properties. Another new easy care fabric for tropical suits is Reeves Orlon-wool "Tela Fresca". In year-round weight suitings, Orlon is being groomed for substantial gains blended with wool in tweed, shetland and similar full-bodied soft fabrics.

For women, Orlon blended with wool, sometimes with rabbit hair and mohair added, in flannels, crepes and tweeds is being used in dresses by big-name designers such as Trigere, Samuel Winston and Monte-Sano. For skirts, Orlon-wool plaids are being supplemented by striped and solid colors. These go well with a wide range of 100% jersey blouses. Alamac Knitting Mills, for example, has just announced a new line of woven Orlon skirt fabrics dyed in the same dye bath to achieve virtually identical color matches with Orlon jersey blouse cloths.

In Du Pont's vigorous push for new markets for Orlon, enlargement of the fiber's use in blankets is receiving substantial development and promotional attention. Screen-printed blankets, for example, of Orlon with bindings of nylon have been introduced by Chatham.

WARM, LIGHT AND FASHIONABLY FULL—A zibeline fleece of 100% Orlon is here cut into a wrap-around coat with a large drape collar and dolman sleeves.

ACRILAN

FOR ACRILAN, Chemstrand's acrylic fiber, the signals appear to be set for full speed ahead. With its plant at Decatur, Ala., running at capacity and expansions under way that will bring production to 45 million pounds during 1958, Acrilan is pushing forward into a diversified range of textile markets, including many new end uses.

In jersey fabrics, one of Acrilan's earliest successes, the fiber is gaining strongly. This summer a Chemstrand spokesman reported that Acrilan's sales to jersey knitters were running more than 50% ahead of last year. Women's blouses and dresses, a wide variety of children's machine-washable garments, and an increasing number of sport shirts for men are some of the more prominent forms in which Acrilan jerseys are reaching consumers. Virtually every manufacturer of branded shirts now offers its customers sport shirts of knitted Acrilan, some in the 100% form, others in blends of Acrilan and silk.

In blankets, another established market for Acrilan, the fiber has strengthened its position in recent months. Every major blanket manufacturer now makes Acrilan blankets, and the demand for them is said to be outrunning demand for wool blankets in stores throughout the country. To further sales of Acrilan blankets, Chemstrand has set up a quality control program. Under the program, blankets of 100% Acrilan which measure up to the standards of workmanship and performance fixed by Chemstrand are numbered and given a "Seal of Quality" tag. This seal is heavily promoted by national advertising including network TV.

One of the newest fields invaded by Acrilan is floor coverings. Carpets of 100% Acrilan were brought out this year by Firth and Cabin Crafts. The latter company has also introduced a deep pile bath and boudoir rug of 80% Acrilan and 20% Verel, Eastman's new acrylic. Chemstrand feels that the carpet market is one of great potential for Acrilan, and it expects consumption in this end use to increase in the months ahead. Acrilan's good points in carpets, according to Chemstrand, are superior resistance to crushing and matting; good wearing qualities and soil resistance. Of special interest to millmen are its processing qualities in carpet manufacture. These include the ability to heat-set twist in the yarns for frieze and other special textures, and to obtain high covering power from the yarns. Another advantage is Acrilan's good dyeability with acetate and basic colors in stock and skein form. Promising results have also been obtained piece-dyeing tufted Acrilan carpeting with vat colors.

Gains are also being made by Acrilan in many woven apparel fabrics. In menswear, Acrilan-worsted and 70% Acrilan-30% rayon cloths, including flannels and garbardines are appearing in wash-and-wear slacks. Some of these are 12-ounce constructions for fall and winter wear such as those in the lines of manufacturers Jaymar and Moyer. Others are lighter cloths for summer wear including Riegel's bengalines, flannels, sheers and linens and from other mills, striated cloths and slubbed weaves. In another new development, Acrilan combined with wool will soon reach consumers in fall weight men's suits, slacks and tweed and shetland sports jackets.

In womenswear, there will appear worsted crepes made by blending Acrilan with rayon and also with wool. Acrilan fleece fabrics are finding acceptance in children's wear in toppers and other short coats for teenagers and women. Many of these garments are lined with nylon taffeta for easy washability.

MAN-MADE FIBERS IN FASHIONS—In this leisure outfit, the blouse is 70% Orlon and 30% acetate. The slacks are 65% Dacron and 35% cotton.

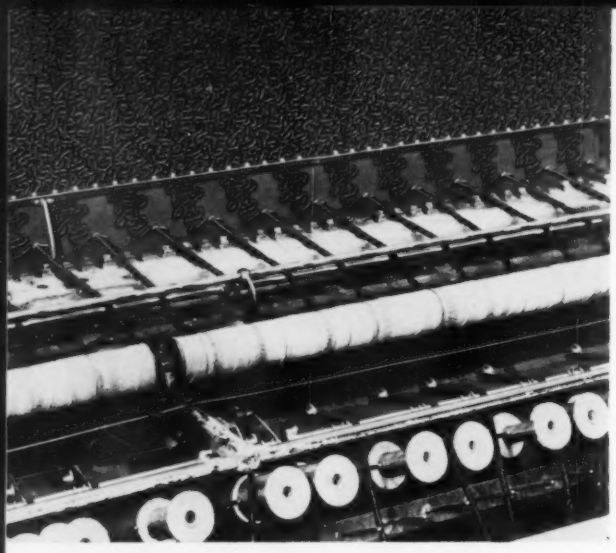
To accelerate consumer acceptance of all the new and established uses of Acrilan, Chemstrand plans to continue and expand its lavish advertising campaign. One form of stepped-up promotion will be a national TV network show on NBC Sunday nights.

DYNEL

IN THE PAST YEAR, Dynel, the acrylic fiber of Union Carbide Chemicals Co., has shown a new burst of vigor in penetrating into many new and promising end uses. At the same time, the fiber has made gains in established end uses such as deep pile coats, underwear, straw hats, and fiber fabrics where it had earlier achieved successes.

In pile fabric coatings, an original note has been struck by the introduction of "Dynacurl," a fabric closely resembling Persian lamb. To make the new fabric, a pile of 100% Dynel chenille yarn is fastened to a woven cotton backing by a Schiffli embroidery machine which attaches the yarn according to a predetermined jacquard pattern in a random-seeming design to give the appearance of Persian lamb fur. Produced by Multiflex Products Corp., the new fur-like fabric makes its first appearance this fall in coats by Franklin Leto to retail under $100.

Meanwhile, deep pile fabrics of 100% Dynel and Dynel-Orlon, aided by more efficient, lower-cost cleaning methods, are expected to be more popular than ever in cold-weather wear this coming winter. At least nine mills are producing these fabrics by knitting or weaving, and 45 major garment manu-



SCHIFFLI SURPRISE—Using Dynel chenille, a pile fabric simulating Persian lamb is produced by sewing the yarn on cotton backing cloth with a Schiffli embroiderer.

facturers will cut them into coats in a greater variety of styles than were hitherto available in these garments.

Sharing the revival of crepes, Dynel has been combined with rayon in a 30-70 proportion to make a worsted-like crepe that drapes well and is adaptable to durable pleating. Also for women's dresses, Cavalcade Fabrics has brought out a linen-type Dynel and rayon fabric which stands up well in warm weather. Breaking new ground, a Dynel knitted sweater-blouse with an interesting diamond pattern has been introduced.

Other promising Dynel apparel developments are blends of one-third Dynel and two-thirds cotton in work clothing. Tests have shown that such fabrics have increased durability in wear over all-cotton due in part to their property of being less chlorine retentive in laundering — an advantage which greatly interests firms specializing in rental of industrial clothing. Summer suitings of 35% Dynel and 65% wool are also an emerging fabric development. Fabrics of this type were selected by the U. S. Air Force as most suitable for summer flight clothing. The Dynel-wool material was chosen from among all other wool-synthetic blends on the basis of comfort, appearance, wearability and flame resistance.

Probably the most important new market to open for Dynel this year was floor coverings. A special carpet Dynel, developed after years of research and testing, made its appearance in carpets offered by Mohawk and Masland. The new Dynel in 18 denier staple is said to have excellent crush resistance, long wearability and good soil and stain resistance. Dynel carpet fiber yields a lofty yarn with outstanding covering power, according to Carbide, and these yarns can be used to produce looped or cut pile, sculptured effects, velvet or tufted fabrics. Dynel in carpets has good dyeability with colors remaining fast to sunlight and cleaning. In another home furnishings use, Dynel blended with saran has been combined with Fortisan in a casement fabric intended for both institutional and home decoration.

In all its apparel and home furnishing end uses, progress for Dynel was speeded by the introduction of a new dye carrier for the fiber which makes possible excellent union shades for Dynel blends in a single bath one-stage dyeing. Called DSP-112, the product is easily emulsified and works by increasing the efficiency of Dynel for dyes to the level of other natural or synthetic fibers with which Dynel may be blended.

Another aid to broader use of Dynel has been the development of a new antistatic finishing agent which provides protection against buildup of objectionable static charges in Dynel fabrics.

In industrial uses, Dynel is finding a promising market in the booming air conditioner field. A bonded Dynel bat with a stiff cotton mesh backing has been introduced for use as an air filter replacement material. Called "Easy Cut Fiberscreen", the filter fabric, a product of Fiber Bond Corp., can be easily cut like cloth to fit all sizes and models of room and window air conditioning units. Widely distributed through department stores, supermarkets and appliance shops, the filter material is sold in one standard size of 15 by 24 inches. Tests show that the bonded Dynel filters show a high dust holding capacity with good filtering efficiency.

Dynel covers have also been introduced for use on rotary vacuum sewage filters where they are said to last much longer and give better service than other fabrics for this use. A Dynel mat has been brought out by the Felters Co. for a number of industrial and other uses. The mat consists of multiple webs containing Dynel bound together to form a resilient sheet material that can be made in various thicknesses, densities and surface textures. It is manufactured in 72 inch width rolls 45 yards long in thicknesses ranging from 1/32 to 1/4 inch. Uses for the material include battery separators; filters for air and corrosive liquids; material for gaskets and weather stripping; linings for clothing; support material for plastic sheeting; shoe inserts; and fabric stiffeners.

CRESLAN

THIS ACRYLIC fiber made by American Cyanamid Co. will reach consumers in its first end products during 1958. Its producer reports that wear-testing and end product developments during recent months have produced significant results in lightweight suiting and dress fabrics, jersey and other knit goods, blankets and fur-like pile fabrics. Included in these results have been 100% Creslan fabrics, Creslan-wool, Creslan-rayon and other blends. To date, these tests have extended to 300,000 hours of actual wear of garments containing Creslan.

Creslan is now produced at a pilot plant in Cyanamid's research laboratories at Stamford, Conn. In May, construction was started on a plant at Santa Rosa near Pensacola, Florida. When completed, it will have a capacity of 27 million pounds of staple fiber and tow. While the plant is being constructed, limited quantities of Creslan will be marketed from the output of the pilot plant. Production will be concentrated in 3 denier staple in a variety of staple lengths suitable for medium and lightweight knit and woven fabrics.

American Cyanamid states that, because of the limited capacity of the pilot plant, Creslan will be introduced in only one or two key product areas during 1958. As production starts up at the Florida plant, its output will be used to add other end product fields. This method of introducing the fiber is expected to keep production from becoming too concentrated in a single product area.

In the past few months a sales and merchandising organization has been established to speed the introduction of the fiber in key consumer products. The company also reports that a complete technical service department, with sections for spinning, weaving, knitting, dyeing and finishing, fabric development and wear testing, will be established.

Continuing research has produced Creslan of superior whiteness and has developed a 15 denier fiber suitable for carpets. Research leading to a Creslan filament yarn is continuing.

VEREL

VEREL, one of the new staple fibers introduced last year, is described by its maker, Eastman Chemical Products, Inc., as a "modified acrylic." Verel's properties, which Eastman expects will make it a useful "special purpose fiber" are: excellent fire resistance; a soft, pleasant hand due in part to its high moisture regain properties said to be double that of any other acrylic; controlled heat shrinkage enabling almost any degree of bulk to be obtained, and marked whiteness. Other properties of the fiber stressed by Eastman are its exceptional resistance to chemicals; good dyeability and abrasion resistance.

Since its introduction Verel has found acceptance blended with cotton in men's hosiery manufactured by Holeproof. It has made its appearance in pile type lining fabrics knitted by Borg and used by White Stag in campus, car and more expensive tweed sport coats for women.

Knitwear blends of cotton and Verel have a soft texture with good dimensional stability through repeated launderings in such items as T-shirts, underwear and sleepers. Its controlled shrinkage factor and soft hand indicate use of Verel in sweaters and knitted outerwear, either 100% or in blends.

Verel-and-wool blends in dress and sportswear fabrics are expected to attract trade interest owing to the desirable feel and texture of these fabrics. Flannel-type men's suiting fabrics of wool and Verel are said to be stronger than all-wool fabrics of similar construction, and yet have a softer hand, good crease retention, and excellent dimensional stability that is retained through dry cleaning and pressing.

Verel is expected to gain an acceptance in industrial fabrics because of its good strength; high resistance to both acids and alkalies; its fire resistance; its controlled shrinkage and good dimensional stability. The new fiber is expected to be especially important is such end uses as work clothing, filter fabrics, paint roller covers and other varied industrial uses.

Reported soon to appear are a group of fabrics containing Verel for use in men's sport shirts. Several fabrics for home furnishings and industrial uses are in the evaluation stage, and more recently carpet manufacturers have expressed strong interest in Verel.

DARLAN

DARLAN, the first "dinitrile" fiber, is produced by B. F. Goodrich Chemical Co. Introduced to consumers last year in deep-pile coat fabrics made by George W. Borg Co., Darlan became available this year in two additional products: bulky knit sweaters knitted by the Benjamin Mosely Co., and a hand knitting yarn produced by the Bernat Co.

Development work with Darlan is going forward in other fields, and it is expected that additional end products containing the fiber will reach consumers by the end of the year. To provide more fiber for this speeded-up evaluation and development program, Goodrich recently began expanding the output of its pilot plant at Avon Lake, Ohio, to three times its original capacity. The expansion will be completed early next year.

Meanwhile further information on Darlan's chemical make-up and properties was provided by Goodrich in March. Darlan was described as being made of "natural gas and ammonia", and it was said to be "the first of a completely new class of fibers based on "vinylidene dinitrile". The fiber was characterized as "extremely soft, resilient, stable, moderately strong and durable", with properties of wrinkle and shrink resistance. In the opinion of a Goodrich spokesman, the fiber's properties will enable it to fill the need for a "special purpose prestige fiber". He said that its primary use should be in "wool-like apparel fabrics".

As it is now produced, Darlan is admittedly a difficult fiber to dye. Although the fiber has good affinity for dyestuffs of some classes, the rates at which many of these dyes diffuse into Darlan are lower than those on many other fibers. To increase the dyeing rate, dye carriers or high temperatures are used.

According to Goodrich, Darlan has a tenacity between 1.5 and 1.75 grams per denier; an elongation of 30% or greater, and a softening temperature of about 350°F. It is said to retain a "significant" portion of its strength and be dimensionally stable at 320°F.

Darlan is a low moisture regain fiber and therefore requires a certain amount of static control. Its density is among the lowest of the fibers. Goodrich states that Darlan's resistance to weathering, prolonged exposure to heat, mildew, insects and acids is better than most fibers. Ease of ignition and rate of flame travel are similar to untreated cotton, acetate, and viscose rayon. Darlan fabrics melt-burn. The apparent ignition temperature is 892°F.

MAN-MADE FUR—Verel, Eastman's new "modified" acrylic, is used to produce the pile fabric for the hood and cuffs of this cold weather coat.

ZEFRAN

ZEFRAN, described by its producer, Dow Chemical Co. as a "nitrile alloy" fiber, will be produced commercially in early 1958 at Lee Hall, Virginia, in a plant currently under construction. Dow announced plans to produce the fiber in staple form in August 1956. It will be offered in a variety of deniers.

Zefran is white in color with a round cross section. The alloy structure of Zefran is said to give it exceptional dyeability while maintaining the physical properties of water insensitive fibers.

Zefran fabrics have been constructed in both 100% form and in blends with cotton, rayon and wool. Zefran, according to Dow, contributes to these fabrics the high bulk, good wrinkle recovery, press retention, dimensional stability and crease resistance required for the new ease-of-care fabrics. Zefran is said to have a pleasing hand and yield fabrics which are comfortable to wear.

According to Dow, the fiber is easily processed into fabrics on all conventional systems. Superior dyeing flexibility is demonstrated by the fact that conventional dyeing procedures can be used with a wide range of vat, naphthol, sulfur, after treated direct, and neutral premetallized dyestuffs.

In a talk last spring, Dr. G. W. Stanton of Dow explained the differences between Zefran as a "nitrile alloy" and an ordinary acrylic having the same constituents as the "alloy". He said that anthraquinone vat dyestuffs show excellent build-up on the Zefran alloy and poor build-up on an acrylic copolymer. He also said that the moisture regain is higher for the alloy and that the sticking temperature is about 35° F. higher.

"The alloy structure," he stated, "is essentially a continuous polyacrylonitrile backbone which is hydrophobic, containing discrete areas of hydrophilic, dye-receptive polymer." Such a structure, he added, permits Zefran to retain 85-90% of its dry properties while wet; and that its high moisture regain controls static to some extent, especially at high humidities, and also imparts added comfort when the fiber is worn next to the skin.

Dow has recently acquired a staff of textile technicians who are carrying out a speeded-up development program for the fiber with a number of mills.

NEW TRENDS IN POLYESTERS

dacron-cotton uses soar

dacron industrial uses pushed

terylene successful in Canada

DACRON

DACRON today in blends with cotton is triumphantly surging ahead high on a mounting wave of popularity with cutters of both women's and men's easy-care garments. The enthusiasm for Dacron is so great that there are many in textiles who say that the Du Pont polyester fiber is the "hottest thing in the market today".

Output of Dacron at Du Pont's Kinston, N. C., plant rated originally at 35 million pounds annually, was expanded last year to bring yearly production to 43 million pounds. Further expansion of Dacron production is "under study" by Du Pont.

In womenswear the dominant Dacron-cotton blend is 65-35% with variant combinations of Dacron-cotton-nylon. Dacron-cotton fabrics have appeared this year in virtually every kind of women's and misses' washable garments including dresses, skirts, blouses, slips, play ensembles, and walking shorts. As a series of surveys conducted by National Opinion Research, Inc. on Du Pont's behalf showed, the crispness, quick-drying and little or no ironing properties of these garments are responsible for their increasing popularity. Stylewise, Dacron-cottons have enormously improved in the past year. Colors have been broadened to include pastels, clear bright tones, iridescent effects and deep shades. New patterns available include raised pin stripes, bold stripes, tiny and large woven checks, and a rich variety of plaids. There are also prints in floral and geometric designs, and novelty fabrics in lacy and embroidered effects.

EASY CARE BLOUSE—Dacron yarn "texturized" by Du Pont's Taslan process is used in this fully washable crepe blouse.

In blouses, one of Dacron-cotton's big end uses, there are garments trimmed with laces of 100% Dacron which launder easily, and also in 100% Dacron "Taslan" textured crepes with a rich, dull hand.

Other uses of Dacron-cotton include combinations with Orlon and nylon in a light weight flannel for sleepwear brought out by Barbizon. Beaunit has a new fabric for lingerie made of Dacron combined with Egyptian cotton and nylon.

In menswear, Dacron combined with cotton, with rayon, with wool and with silk continues to expand its importance in the broad field of summer garments. In cotton blends, fabrics for spring, 1958 will offer new style effects including hobnail effects, and linen-like textures as well as prints, stripes and plaids for sport shirts. To help retailers sell Dacron-cotton men's and boy's suits, sport coats and slacks, Du Pont will furnish hang tags for the 1958 selling season for these garments made with 65% or more Dacron in both warp and filling yarns. The new hang tag program for these blends supplements a Du Pont tagging effort already under way for blends of 55% or more Dacron with rayon.

Dacron blended with rayon in slacks and summer suits, already well-established and popular with retailers, will continue to be an important item in menswear. Dacron-wool blends, the leading fabrics in men's summer suits, are moving forward into fall weight garments. Two upper-priced suit houses, Timely Clothes and Hart, Schaffner & Marx will bring out fall suits cut from 9½ — 10 ounce fabrics of this blend. For tropical suits, the trend in Dacron-wool is strongly toward "super lightweight" fabrics with weight ranging from 5.5 to 6.5 ounces per 60-ounce yard. These garments will be more prevalent in stores next spring and are expected to go well with consumers seeking maximum confort with a tailored appearance in summer garments.

Industrial Uses Developed

Dacron, so successful in apparel fabrics and in sheer marquisette curtains, is also making impressive gains in a growing range of industrial end uses. High strength paper with excellent resistance to chemicals, heat and moisture is a promising end use for Dacron which is also gaining in non-woven bats, felts, and other bonded structures where toughness and resistance to acids and alkalies are required. Dacron is also finding use as a binder fiber in non-wovens made principally of other fibers such as cotton and rayon. Dacron has also been used successfully for reinforcing industrial V-belts used for heavy-duty work. Field tests show that these belts transmit up to 40% more power. Users of Dacron-reinforced belts report that their service life is as much as 250% greater than comparable belts made with other fibers. As a load-carrying filler cord in fire hose, Dacron is proving its usefulness when combined with cotton warp cords. Fire hose so made is said to have much lighter weight and greatly improved burst strength.

TERYLENE

THIS POLYESTER fiber, manufactured in Canada by Canadian Industries Ltd., is reported to be moving forward to wide acceptance in an increasingly broad variety of textile uses. During the first half of 1957, Canadian mills bought about twice as much Terylene filament yarn and roughly three times as much staple fiber as they did during the same period last year.

CANADIANS LIKE EASY CARE, TOO—This dress of Terylene blended with cotton seldom needs ironing and its pleats stay sharp through washing.

Terylene's producer states that when its Millhaven, Ontario, plant was opened in 1955, it was designed to meet the estimated Canadian market for the fiber in 1960. However, demand in both domestic and export markets has already risen sufficiently to require nearly the full design capacity of 11 million pounds.

Currently Canadian Industries, Ltd. is supplying Canadian mills with a more extensive range of Terylene filament yarns and staple fiber. Despite the present world shortage of polyester fiber, the requirements of Canadian mills, the company states, will be met in full. Terylene of Canadian manufacture is now being exported to the United Kingdom, Europe, Latin America and other parts of the world in substantial quantities.

Popular in Washable Garments

The fiber's ability to retain desired pleats and set creases, wet or dry, and its rapid-drying properties, have secured for it a large market in blouses, dresses, shirts, professional uniforms and slacks. The recent development of an extra dull grade of filament yarn will widen the fiber's acceptance in lingerie.

A promising Canadian development this year has been a lock-stitch tricot of 100% Terylene, an opaque fabric with a pleasant crispness. It is already a success in blouses. Meanwhile, pin-striped men's shirts of Terylene tricot have been well received. A similar fabric is now going into men's pajamas, women's dresses, blouses and housecoats. It requires little ironing.

Last spring an intimate blend of 65% Terylene and 35% cotton was successfully introduced in dresses and blouses. The same combination in batiste and broadcloth is expected to find acceptance in lingerie, men's shirts and a wide variety of other items during the coming year.

There is also said to be much greater interest at the mill level in Terylene wool fabrics. A substantial market for this blend is expected in 1958. It has been well received in the uniform and slack fields and in summer tropicals. Heavier weights are expected to be popular in the fall. In the home furnishings field, excellent Terylene marquisette curtain fabrics have been developed. Blankets of 50% Terylene and 50% wool will be marketed this fall.

In industrial end uses, good progress has been made in developing paper machine felts, both wet and dry end. Terylene has been particularly successful in drier felts because of its resistance to high temperatures under oxidizing conditions. Fire hose continues to be a major industrial market, and use of the fiber is spreading into pressure hoses, V-belts and other applications in the rubber industry.

SARAN

SARAN, the tough and durable filament yarn and staple fiber produced by a number of companies from raw material supplied by Dow, made progress in the past year as a furniture and upholstery fabric, in carpets, awnings and a variety of other specialized uses.

A wider use of saran fabrics by furniture manufacturers was apparent at the June Home Furnishings Market in Chicago. In the main, these applications were on dinette, occasional and reclining type chairs in the medium price bracket. It is expected that this trend will continue to grow over the next few years. Along with the increasing use of saran on furniture for the home, saran fabrics are showing a healthy growth in office furniture and commercial applications.

In the carpet field, producers of saran yarns and fiber are hopeful of a steady growth in both woven and tufted constructions. Also in the field of home furnishings, a heavy demand for curtains and drapery materials of saran is anticipated during the coming 12 months. In this end use, greater acceptance of saran is aided by the fiber's flameproof (it will not support combustion) and easy care qualities, especially in public installations. A great deal of the optimism for increased use of saran in the curtain field has been due to the development of an attractive, sheer 100% saran curtain material.

Supplementing saran's established use in outdoor furniture, Dow in February announced a new saran 909 for awning fabrics, along with a promotional campaign to assist the awning industry in tapping what Dow feels is a large potential for awnings woven of the fiber. Also in home furnishings uses, a recent development helpful to saran has been the announcement of an entirely new color line with accents on the current decorator shades.

For Velon, a fiber chemically similar to saran produced by Firestone Plastics Co., continued use is reported in outdoor and casual furniture both in webbing and broad fabric constructions.

VENTILATED COMFORT—Strong webbing of Velon, Firestone's version of saran textile filaments, adds a note of durable and resilient color to this aluminum outdoor chair.

VICARA

VICARA, the protein fiber made by Virginia-Carolina Chemical Corp., from zein, a corn by-product, is expected in the near future to end a period of uncertainty about its prospects by announcing several new developments intended to strengthen its position in textile end uses.

A new form of Vicara will be introduced shortly with 25% greater tenacity both wet and dry. Also the fiber will be improved by a more permanent crimp than it possessed in the past. These improvements are expected to open a revitalized drive on the part of Vicara's manufacturer to obtain substantial consumption for the fiber in a range of apparel fabrics.

Meanwhile Vicara's manufacturer reports that the fiber is gaining ground in a number of end uses, the most notable of which is knitwear. Jantzen, which inttoduced its first Vicara-wool sweaters in 1951, has increased its production of these garments every season since then. The company's sales of Vicara-wool sweaters are reported to have risen over 700% in the past five years. Brownie Knitting Mills introduced a Vicara-nylon sweater in 1954 and its sales of these garments have risen 500% since then.

Last fall, Eram, a large French knitwear manufacturer, brought out Vicara-wool and Vicara-nylon sweaters in a wide range of styles. Eram also introduced a group of Vicara-wool dresses. All three types of garments are reported selling well in France.

Moving beyond knitwear, Vicara will reach consumers this fall in a number of new woven fabrics. Among these are coatings of Vicara-wool, and flannels and tweeds of the same blend for skirts and dresses. There will also be Vicara-Orlon woven fabrics for suits, dresses and skirts which will be permanently pleated and washable. A Vicara-vicuna coating will be introduced by a high-priced coat house.

In menswear the established blend of cotton-Vicara for men's robes and sport shirts will continue to be marketed. There will also be Vicara-wool tweeds in sports coats.

Among the properties of Vicara which make it advantageous in apparel fabrics are extreme softness; good drapability; lightness and warmth said to be equal to fine wools; absorbency that makes it comfortable to wear to the skin.

TEFLON

THIS TETRAFLUOROETHYLENE fiber manufactured by Du Pont has made some progress in specialized industrial functions where its unique properties of outstanding resistance to chemicals, high melting point and low friction enable it to serve a useful purpose. Since Teflon costs $14 a pound, its use is limited to applications where its effectiveness is great enough to offset this steep price.

Among the uses where Teflon has gained acceptance are as a facing fabric for metal suspension joints; in anode bags used in refining gold, silver and platinum where the bags are exposed to hot nitric acid; as fabrics used in filtration of particularly destructive acids; as valve packings in pumps handling strong chemicals.

NEW TRENDS IN POLYETHYLENES

GROWING PAINS and the troubles of approaching maturity afflict polyethylene fibers along with a heady confidence that opportunities for volume consumption and substantial profits may be approaching for the first time. To understand the present situation in polyethylenes one must first glance backward for a moment.

Production of polyethylene monofilaments for textile purposes began in the United States as early as 1946. Among the companies which entered the field in subsequent years and which are still active in polyethylene production today are National Plastics Products Co., Reeves Brothers, Firestone Plastics Co., and Dawbarn Brothers, Inc.

The early fibers had properties of chemical inertness, toughness, flexibility and resilience that made them suitable for a limited number of applications, largely in industrial textiles. Their low melting point, lack of dimensional stability and hydrophobicity appeared to make them unsuitable for apparel fabrics. Consequently, for a number of years, the use of polyethylene filaments in textiles did not grow appreciably. But in the past few years two events caused a change in the situation, opening new horizons for polyethylene in textiles. The first was the cancellation in 1952 of the agreement between Imperial Chemical Industries and Du Pont which permitted companies other than Du Pont and Bakelite to produce materials for polyethylene filaments. The second event was the development of new methods of low pressure polymerization so that two different types of polyethylene are now available.

As a result, something like a rush occurred among chemical companies to turn out new low pressure polymers for polyethylene manufacture.

The appearance of these new polymers has brought a degree of confusion and uncertainty to polyethylene prospects in textile end uses. In what quantity the fiber market will be able to absorb more than a fraction of the 200 or 300 million pounds to be produced of the linear type or high density polyethylenes remains a matter of conjecture.

Several reasons exist for this uncertainty. These new polymers are produced by different methods and techniques which are not yet definitely established. As a result, the resins as supplied vary with regard to purity and molecular arrangement—variations to which the fibers are sensitive not only in processibility, but also in their inherent textile properties. Nevertheless, considerable progress has been made recently in the commercial production of these resins from the standpoint of their properties with regard to their end uses in fiber production.

Of whatever origin the resin, the new fibers have in common a higher softening point and a strength several fold that of the conventional low density filaments. Their strength exceeds that of saran, coming more or less close to nylon, particularly in wet applications. But tenacity and other essential properties are not yet sufficiently established to permit standardization.

Such basic uncertainties add to the difficulties in invading markets strongly held by saran and even more so by nylon, and in creating new markets. However, practical results have already been obtained in some end uses, such as cord and rope, especially ski and water-ski ropes, with further developments to be expected. In other outlets, polyethylene is partly replacing, partly increasing the applications of the conventional fibers, such as filtration cloths, for example, and other specialty fabrics in the industrial field.

From a volume standpoint, one big question is whether these fibers can substitute or uproot saran in the upholstery and seatcover business. Their strength and abrasion resistance being more than sufficient, and assuming progress is made in weathering stability, there is a good chance that present hopes of gaining in this market could meet with success. Multifilament yarns also are under consideration for a variety of end uses, woven fabrics in particular, but it is still premature to make predictions.

Further basic developments are in the making. New varieties and new types of these polymers, now called polyolefines, will become available, and the present polyethylene fibers of high and low pressure production may only be first steps in this direction. One example is the polypropylene fiber which has been developed in Italy, and whose commercial evaluation should not be far off in this country. The higher softening point of such fibers and other improvements in their characteristics may again change the picture not too far in the future.

(For much of the above information, the author is indebted to Dr. Victor L. Erlich, Director of Research, Reeves Brothers, Inc. Dr. Erlich is the author of the broad review of polyethylene developments which appeared in the May and June, 1956 issues of this magazine.)

In the area of specific activity with linear polyethylenes by various established producers, Dawbarn has been experimenting with both the Phillips and Zeigler type polymers for two and one half years. The company has given the trade name of "DLP" to fibers produced from either of these resins. Dawbarn has been in production since before the first of this year on "DLP" monofilaments with most of its output going to the rope industry. Recently, the company went into production on a "ribbon" yarn; it is also experimenting with multifilaments.

Although most of Dawbarn's production of "DLP" has gone into the manufacture of rope, the company expects it to have wide acceptance in seat cover and outdoor furniture fabrics as well as original upholstery and other uses in new automobiles. A number of industrial uses such as filters have been under test for some time and appear to have promise. The ribbon yarn is already being used in limited quantities for shoe fabrics and many other fabrics are being tested. Dawbarn plans an addition of 40% to its present plant capacity at Waynesboro, Va.

Reeves Brothers, which is active in research and commercial production of polyethylene plastics and textile filaments (which it also weaves into fabrics in its own mills) has brought out a new line of high tenacity filaments the "Reevon 700 Series". Reeves has recently expanded its facilities devoted to polyethylene by opening a new plant at Fairmont, S. C.

Firestone has brought out "Velon LP", a new low pressure or linear polyethylene monofilament said to be suitable for outdoor furniture and broad fabrics for upholstery and automobile seat covers. The monofilament is said to be especially high in tensile and knot strength, in abrasion and moisture resistance and flex life. Color stability is good, some colors having withstood as many as 1,500 fadeometer hours without change.

NEW TRENDS IN METALLICS

FOR METALLIC YARNS, the current marketing picture glitters with the heart-warming luster of strong demand and exciting new sales perspectives opening in many new areas of textiles. Broader use of metallic yarns as decorative elements in fabrics has been tremendously accelerated by the use of Mylar, Du Pont's polyester film, as the laminate for these yarns.

Metallic yarns made with Mylar can be subjected to normal dyeing procedures; they can be bleached and mercerized when used in cotton fabrics, and carbonized when combined with wool. Mylar metallic yarns in fabrics can also be washed in home washing machines and ironed without special precautions. Hence the use of Mylar has been growing rapidly at the expense of the other material generally used in these yarns, acetate butyrate.

During recent months, metallic staple fiber, introduced several years ago by Metlon Corp., also found broader uses, especially in dress goods and in drapery and casement cloths. Another producer, Reynolds Metals Co., recently brought out aluminum staple in a line of 12 colors.

The newest volume market opening for metallics is women's washable dresses, largely cotton, but including some cotton-synthetic blended fabrics. Now that the washability of metallic yarns made with Mylar is fully established, fabric stylists and dress designers are enthusiastically exploiting the potential for novelty and freshness offered by lavish use of metallics in dress fabrics. The touch of opulence and high luxury offered by metallics, especially the popular gold and silver yarns, is also another persuasive reason for their increasing popularity in washable garments.

Along with their spreading use in easy care fabrics, metallic yarns are being employed increasingly in a wide range of other women's dress fabrics including many daytime dresses and blouses of rayon, nylon, Orlon and other man-made fibers. In women's accessories, metallic yarns are being used increasingly in shoes, bedroom slippers, handbags and millinery. In menswear, these yarns are adding a new glitter to neckties, and are providing interesting new effects in sport shirt fabrics.

In domestics, another blossoming field for metallics, these yarns have progressed from their earlier success in towels and table linens into sheets and pillow cases. Metallics are also adding their decorative glitter to washable bedspreads, to shower curtains, bath mats and to blankets as well as quilts and even mattress ticking.

Home furnishing fabrics are also increasing their use of metallics for a diversity of styling and luxury effects. Now well established in upholstery cloths, metallics are being used in ready-made slipcovers and in piece goods sold over-the-counter for slipcovers and upholstery fabrics. Metallic yarns in carpets are adding under-foot glitter fitting in well with the trend to make floor coverings more interesting stylewise. In auto upholstery metallic yarns combined with solution-dyed yarns produce a tweed and iridescent effect that creates a new look of subtlety rather than the heavy metallic look of past seasons. *(For a detailed report on Metallics see MTM June '57.)*

NEW TRENDS IN GLASS FIBERS

GLASS FIBERS in printed and solid color draperies are said to be selling strongly in department stores—in some stores better than any other drapery material. In sheer marquisette constructions, glass fibers are holding their position as second to Dacron in popularity with consumers. The success of glass fiber draperies is due to recent improvements in dyeing these fabrics so that a wide range of bright colors are available—colors that do not easily fade, or peel off.

Increased use of glass fibers as marquisette curtains has been helped by development of a new finish by Owens-Corning Fiberglas Corp. based on titanium dioxide. The new finish gives glass fiber curtains added opacity, resulting in greater reflectivity thus imparting a greater degree of whiteness when the curtains are hung at windows.

Insect screening made with glass fiber continued to gain in use. Screening of this kind is made by coating glass yarn with a special finish, usually a vinyl-plastisol or organisol to give it necessary stiffness. The yarn is then woven into a conventional 18 x 14 mesh fabric. Advantages of glass fiber insect screening are outstanding resistance to corrosion and weathering; resistance to fire, exceptional dimensional stability, and high impact strength.

Use as industrial laminates remains the largest single market for woven glass fiber fabrics. A baker's dozen or so of weavers produce about 50 standard fabrics for this field. These basic constructions can be greatly increased by substituting singles 150's glass yarns for the more expensive plied yarns.

Plastic structures reinforced with woven glass fibers are used for a growing diversity of products including parts for electrical devices, boat hulls, molded articles, pipe covers, and aircraft parts. New electrical uses for glass fibers are expected to be opened by the recent introduction of a glass yarn pre-saturated with a bituminous material. The new yarn is said to permit increased braiding efficiency and improved adhesion of braids and wraps to the outer finish of sheathed building cables, service entrance cables and rubber-covered building wire. It is supplied on both twister tubes and braiding packages by Owens-Corning.

SMART SPORTSWEAR—Silver metallic yarns blend with gray-toned horizontal stripes to give this leisure shirt of cotton and silk an extra note of luxury.

MODERN TEXTILES MAGAZINE

TABLES of DENIER NUMBERS and FILAMENT COUNTS of U. S. Man-Made Yarns and Fibers

an annual compilation

prepared by

H. George Janner
MANAGING EDITOR

THESE TABLES have been revised and brought up to date so as to present the most recent data on denier numbers and filament counts of man-made filament yarns and staple fibers manufactured in the United States. The information presented has been obtained from the companies that produce these yarns and fibers, and represents the latest data available.

For the first time since these tables were first published 25 years ago, they are printed on a special pull-out section. This enlarged space permits wider spacing so that users will find the tables easier to read and much more convenient to consult.

Reprints of these tables are available at nominal cost by writing MODERN TEXTILES MAGAZINE, 303 Fifth Ave., New York 16, N. Y.

NOTES TO TABLES

In the following, we are pointing up some of the changes which have taken place and present some additional information which could not very well be incorporated in the Tables.

Cellulosic Yarns

Rayon

American Bemberg is now offering a full line of "Cupracolor" solution dyed colors in "Cupioni" and "Strata" yarns. (Table 1.)

American Enka has added 50/20 Briglo and 200/40 bright eight turn yarns. (Table 1.)

E. I. Du Pont de Nemours & Co. has augmented its rayon filament yarns with a new line of #77 and 7-77 yarns. (Table 1.)

Courtaulds (Alabama) Inc. has increased its range of Coloray staple to 24 shades. These additional shades are particularly pointed to the home furnishings trade. (Table 4.)

Hartford Rayon Co. is now offering a range of 15 colors in their new "Kolorbon" solution dyed rayon staple. All colors are made in 15 denier dull and 8 denier bright, with the exception of 3 shades—Cafe Brown, Midnight Black and Sable—which are made in 8 denier and 15 denier bright. The white fiber "Viscalon 66" comes in 15 denier bright and dull and 8 denier bright. Both the colors and white staple have greatly increased crimp and resilience. (Table 4.)

Acetate

Celanese Corp. produces, in addition to regular acetate staple for spinning, special bulk staple for nonwovens and battings, high-crimp staple for carpets, and black acetate staple. (Table 4.)

Eastman Chemical Products has introduced a new cross-section "Eastman 50" yarn. This is offered in the same deniers and filament counts as regular cross-section acetate yarn in Estron and Chromspun Black. (Table 1.)

Non-Cellulosic Yarns

Nylon

American Enka is now producing "Nylenka" filament yarns as follows: 10/2, 15/2, 20/2, 30/6, 50/13 in semi-dull, 15/1 and 40/8 in semi-dull and dull, 200/16 and 200/34 in bright. (Table 3.)

Industrial Rayon is experimentally making, selling and evaluating an 840/140/1.0 Z bright high tenacity filament yarn on four pound cones.

Creslan

American Cyanamid Co. reports that development work on Creslan acrylic filament yarn is being continued. In addition to the 3 denier staple, now produced in pilot plant quantities, the company plans to make available other deniers, also in limited quantities, as market development progresses.

Darlan

B. F. Goodrich Chemical Co. states that production of Darlan dinitrile fiber in staple form is still limited to the semi-works plant, but that it may now be obtained with crimp set or unset. The fiber is being sold for use in deep pile luxury coats, women's wide wale medium gauge sweaters, and hand knitting yarn. Other fabric developments in suitings and shirtings are progressing rapidly. Their tow, at present, is also available in small quantities only. (Tables 4 & 5.)

Reevon

Reeves Brothers, Inc. have further developed their high tenacity polyethylene filaments extruded from linear or high density polyethylene as their "700" series. They are continuing to supply their special "Reevon" filaments of the "600" series, produced from branched or low density polyethylene. Both types are offered in unstabilized clear and in colors or in sunlight stabilized colors in a variety of specified properties. (Table 3.)

Polymers

Polymers, Inc. is producing this yarn of an elastic nature, known under the trade name "Polymers". The fibers come in round shape in the size of 0.012" up with elongation varying from 100 to 400%. The same raw material, plasticized vinyl chloride, is used to produce flat sections in the order of 0.025" wide and 0.006" thick. The company is also producing low-pressure polyethylene monofilaments.

Glass Fibers

Owens-Corning Fiberglas Corp. has added the following yarns: 1800-1/0 (25 denier), 408 filament decorative yarn (300 denier), and industrial and decorative coated yarns. (Table 3.)

METALLIC YARNS

Conomet

CONTINENTAL CAN CO. which entered the metallic yarn field a little more than a year ago produces its "Conomet" yarn in two forms: Conomet MM (Metalized Mylar) and Conomet FM (Foil Mylar). Both types are available in filament and staple form. The filament yarns come in 1/32, 1/50 and 1/64 inches wide and the staple in 0.01" and 0.005" wide and up to 4" long. Conomet MM may be had in 3 ply-1½ mil or in 2 ply-1 mil construction. The staple is available in crimped or straight. Both yarns come in gold, silver and a range of custom colors. They are non-tarnishable, non-toxic, and are claimed to possess good strength, pliability, softness of hand, high yield and brilliance. According to the producer, the yarns can be laundered and dyed at the boil, are completely drycleanable, possess good light fastness and good resistance to most chemicals.

Fairtex

FAIRTEX CORP. manufactures three basic types of metallic yarns: Fairtex Type 206 Butyrate, Fairtex with Mylar 100V and 150V metalized type, and Fairtex with Mylar 150F, foil type. These yarns are slit in widths from 1/8" to 1/100" and are available either supported or unsupported on cones, tubes and disposable spools. In addition to gold and silver, a wide range of 12 other colors are produced in the above type. The yarns may also be had in staple form.

Lame

STANDARD YARN MILLS produces this yarn in widths ranging from 1/16" through 1/120". It is also available in staple and flock form. It may be had in gold and silver and a number of other colors. Lamé with Mylar is available in both foil and metalized type in widths of 1/16" to 1/100" of an inch and in a wide range of colors. Standard also supplies yarns both of Lamé and Lamé with Mylar, with the supporting fibers including Fortisan, nylon, cotton and silk.

Lurex

THE DOBECKMUN CO., LUREX YARN DIV. offers four basic types of Lurex in widths from 1/16" to 1/128" and in a diversified range of gauges and colors as follows: Lurex (regular)—the original non-tarnishing, general purpose yarn; Lurex MM a strong flexible yarn made with aluminized Mylar film; Lurex MF with Mylar film and aluminum foil content; and Lurex TA, a low elongation, chemically resistant general purpose yarn made of aluminum foil and cellulose tri-acetate film. A variant of the patented MM type is their "Faceted Lurex" the construction of which approximates a round yarn. Another modification of the MM yarn is Lurex MM-CR which is claimed to possess increased resistance in short cycle exposures to caustic soda normally encountered in cotton wet processing. Lurex is also available in staple form. It may be had supported or un-supported, and in all types of put-ups.

Malora

MALINA COMPANY produces its Malora metallic yarn in the Butyrate Acetate type as well as Metalized Mylar and Mylar to Foil types. The yarn is available in widths of 1/16" to 1/100", unsupported or supported with silk, nylon, rayon, Fortisan, etc. It may be had in put-ups to suit the individual requirements of the customer. Gold and silver in most widths is carried in stock for immediate delivery. Other colors can be supplied on special orders. The company also offers metallic cellophane yarn in gold and silver in all standard widths.

Metlon

METLON CORP., a subsidiary of Acme Backing Corp., is putting out two types of metallic yarn known as Metlon and Metlon-with-Mylar. New yarns in the Mylar quality include Metlon H.T. (high tenacity) Mylar for knitting and sewing, and Automotive Fast gold and silver which is claimed to possess excellent light fastness. The Metlon-with-Mylar yarns are being manufactured in widths from 1/120" yielding 32,000 yards to the pound, to ¼". The yarn can be used unsupported in any width and can be vat dyed and washed by machine in any detergent. Gold and silver are stocked, while other colors may be had by special order. The company is continuing the manufacture of Metlon butyrate types, especially the 1/120" width, the narrowest, which yields 21,000 yards and has great pliability and softness. Metlon 1/120" is also furnished in staple form in any desired length. The butyrate yarns come in gold and silver, as well as a wide range of metallic colors. The company also offers iridescent yarns in a variety of widths.

Reynolds Aluminum Yarn

REYNOLDS METALS CO. manufactures its Aluminum Yarn in widths from 1/8" to 1/80" made of bright aluminum foil combined with either Mylar polyester film or acetate butyrate. They offer a full line of metallics in either supported or unsupported form on any desired package. A wide range of colors are available and any non-standard color may be produced. Reynolds is now also offering a new metallic staple, which comes in 30 denier for the metalized Mylar, in 40 denier for the plain foil, and in 70 denier for the Mylar foil yarn. The staple is available in any length from ½" to 14", with or without crimp, and is said to be of extreme fineness. It can be used on all spinning systems.

TABLE 1

RAYON and A

DENIE

Producers	40	45	50	55	60	65	75	100	120	125	150	170	200	230	240	250	275	300	350	400
Rayon																				
American Viscose Corp.	—	—	20	—	10	—	30	40-60	—	50	24-60	—	44	—	—	60	—	44	—	—
	—	—	—	—	—	—	10	14	—	—	40-90	—	—	—	—	—	—	15-50	—	—
E. I. du Pont de Nemours & Co., Inc.	—	—	20	—	—	—	10-30	15-40	—	50	40-60	—	35	—	—	—	—	50	—	—
	—	—	—	—	—	—	30	60	—	—	90-100	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	40	—	—	90	—	80	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1-30	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Rayon Corp.	—	—	—	—	—	—	—	40	—	—	40	—	20-40	—	—	—	—	44-80	—	—
	—	—	—	—	—	—	—	—	—	—	40	—	—	—	—	—	—	80	—	—
American Enka Corp.	—	—	18-20	—	—	—	18-30	40-60	—	40	40	—	40	—	—	60	—	50-60	—	—
	—	—	—	—	—	—	10-45	—	—	50	90	—	—	—	—	—	—	40	—	—
	—	—	—	—	—	—	60	14	—	—	—	—	40	—	—	—	—	—	—	—
No. American Rayon Corp.	—	—	—	—	—	—	30	60	—	52	42	—	—	—	—	—	—	75	—	—
	—	—	—	—	—	—	—	40	—	60	60	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	75	—	—	—	—	—	—	—	—	—
Skenandoa Rayon Corporation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	50	—	—
	—	—	—	—	—	—	—	—	—	—	40	—	—	—	—	—	—	—	—	—
Celanese Corporation of America	—	—	—	—	—	—	30	40-60	—	—	40-*60	—	—	—	—	—	—	50	—	—
	—	—	—	—	—	—	—	60	—	—	40-90	—	—	—	—	60	—	—	—	—
New Bedford Rayon Co.	—	—	—	—	—	—	—	40	—	—	40	—	—	—	—	—	—	40	—	—
	—	—	—	—	—	—	—	—	—	—	40	—	—	—	—	—	—	—	—	—
											also Monofil. bright									
American Bemberg	30*	—	36*	—	—	45	60*	74	—	60	120	—	—	—	—	—	—	225	—	—
	30*	—	36*	—	—	45	45*	60	—	60	90	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	120	—	—	—	—	—	—	—	—	—
	—	—	30	—	—	—	—	60	—	—	90†	—	120	—	—	—	135†	—	—	—
	—	—	—	—	—	—	—	—	—	—	135	—	—	—	—	—	372	—	—	—
Acetate																				
American Viscose Corp.	—	11	—	14-20	—	—	20	28	32	—	41	—	54	—	—	—	—	80	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Celanese Corp. of America	—	13	—	15	—	—	20-50	13-26-40	40	—	20-40	—	52	—	—	—	—	50-80	—	—
	—	—	—	15	—	—	20	26	40	—	40	—	52	—	—	—	—	80	—	—
	—	—	—	—	—	—	—	20	—	—	30	—	40	—	—	—	—	60	—	—
	—	—	—	15	—	—	20	26	32	—	40	—	52	—	—	—	—	80	—	—
E. I. du Pont de Nemours & Co., Inc.	—	—	—	—	—	—	24	—	—	—	60	—	—	—	—	—	—	40-80	—	—
	—	13	—	18-24	—	—	8-24	11-32	40	—	40	—	64	—	80	—	—	80	—	—
	—	24	—	—	—	—	50	24-66	50	—	16	—	60	—	—	—	—	40	—	—
	—	—	—	—	—	—	—	22	—	—	—	—	64	—	—	—	—	80	—	—
	—	—	—	18	—	—	24	32	—	—	40	—	60	—	—	—	—	40-80	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40-80	—	—
	—	—	—	—	—	—	—	24	40	—	—	—	—	—	—	—	—	—	—	—
Eastman Chemical Products, Inc.	—	11	—	13	—	—	19	25	30	—	38	—	50	—	—	—	—	75	—	—
	—	—	—	20	—	—	49	40	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	36	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	19	25	—	—	38	—	—	—	—	—	—	75	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	25	—	—	38	—	50	—	—	—	—	75	—	—
	—	—	—	—	—	—	—	25	—	—	38	—	50	—	—	—	—	75	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	104	—	—	—	—	75	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	104	—	—	—	—	75	—
	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—	—

TABLE 2

INTERMEDIATE and

DEN

Producers	30	40	50	60	90	120	150	270	300	450	600	900	1100
Am. Viscose	—	—	—	—	—	—	60	—	120	120	234	350	490*
Du Pont	—	20	20-35	—	—	—	60	—	120	180	240	—	480-720
	—	—	—	—	—	—	—	—	—	—	—	—	—
Ind. Rayon	—	—	—	—	—	—	40	—	80	—	—	—	480
	—	—	—	—	—	—	—	—	—	—	—	—	—
Am. Enka	—	—	—	—	—	—	—	—	—	—	—	—	480*
No. Am. Rayon	—	—	—	—	—	—	—	—	75	—	—	—	—
Beaunit Mills	—	—	—	—	—	—	—	—	—	—	—	—	—
Celanese	40*	—	—	80*	120*	160*	180	360*	360	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—

*Note: * High tenacity or tire cord yarn.*

TEXTILES' TABLES OF DENIER AND

ACETATE YARNS

ERS: 450	600	700	720	900	1080	1100	1800	2000	2200	2400	2500	2700	3000	3200	4000	5000	5300	Types & Brand Names
100	30-100	—	—	100-60 150-50	—	—	—	—	—	—	—	150	—	—	—	—	—	Avisco, Bri., Dull & Semidull, Thick & Thin, Colorspun
72 100 30	96 1-16	— 16	— —	144 50 1	— —	— 240	100 —	— —	— 480	— —	— —	150 —	— —	— —	— —	— —	— —	Bright and Dull Thick and Thin #77 Rayon 7-77 Rayon
60	90	—	—	50-510 150	—	—	—	—	—	—	—	—	—	—	—	—	—	Bright Semi-dull Luster #4
80 120	80 120	—	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	Briglo, Perlglo, Englo Bright Eight Turn
—	98	—	—	46	—	—	—	—	—	—	—	—	—	—	—	—	—	Bright, Xtra-dul
75	98	—	—	150	—	—	—	—	—	—	—	—	—	—	—	—	—	Bright, Veri-Dul
120*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Bright Dull *Thick & Thin
—	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	New Bray New Dull
— 225 372	— 372 372†	— — —	— — —	— 372† 372†	— — —	— — —	— — —	— — —	— — —	— — —	— — 744	— — —	— — —	— — —	— — —	— — 1488	— — —	Bemberg & Matesa Rayon, Reel Spun, Spool Spun Yarn *also in organzine twist Cupioni / Strata †Solution dyed colors
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Avisco, Bri. & Dull
—	13-160	—	—	20-80-240	—	—	80	—	—	120	—	120	160	160	200	—	—	Bright & Dull
120 90 120	160 120 160	— — —	— — —	80	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	Bright Celaperm Thick & Thin Arnel (Triacetate) Bright & Dull
— 120 — 120* — —	— 160 — 160* — 80-160	— — — — — —	— — — — — —	44 44-70 240 240* 44-70* 70	— — — — — —	— — — — — —	88 88 — — — 140	— — — — — —	— — — — — —	— — — — — —	— — — — — —	132-210 210 132 — — —	— 210 — — — —	— — — — *Black only —	— — — — — —	— — — — — —	— — — — — —	Type 20 Bright & Dull Thick & Thin Color Sealed Type C Semi-Dull
114 — — — 114 — — — — —	156 — — — — — — — — —	— — — — — — — — — —	— — — — — — — — — —	45 75 128 230 15 128 — — — —	— — — — — — 128 128 — —	— — — — — — — — — —	— — — — — — — — — —	— — — — — — 16 D/F 16 D/F — —	— — — — — — — — — —	— — — — — — — — — —	— — — — — — 16 D/F 16 D/F — —	— — — — — — — — — —	— — — — — — — — — —	— — — — — — — — — —	— — — — — — — — — —	— — — — — — 16 D/F 16 D/F — —	Bright & Dull Estron Chromspun Thick & Thin Estron Thick & Thin hCromspun Lofted Estron Lofted Chromspun Estron Crystal Chromspun Crystal

HIGH-TENACITY YARNS

NIERS 1165	1200	1250	1530	1650	1800	1900	2200	2400	2450	2700	3300	4400	Types & Brand Names
—	—	—	—	980*	—	—	980*	—	—	—	—	—	Avisco Tire: Rayflex and Super Rayflex
480	720 —	480	960 —	720-1100 —	1100 —	720 —	960-1440 —	1440 —	960 —	— —	— —	— —	Super Cordura Cordura
—	—	—	—	720	—	—	720 1000 2000	—	—	—	1440 —	1440 2000 4000	Tryon Bright for tires
—	—	—	—	720*	—	—	960	—	—	—	—	—	Viscose Tempra Super-High Tenacity
—	—	—	—	720*	—	—	—	—	—	—	—	—	Super-Narco High-Narco Super-High Tenacity
—	—	—	—	720*	—	—	—	—	—	—	—	—	High Tenacity
—	—	—	—	—	—	—	—	—	—	also F800 and F1600			Acetate: Fortisan F-Fortisan-36

FILAMENT NUMBERS OF U. S. MAN-MADE YARNS A

TABLE 3

NON-CELLUL

DENIERS

Producers	7	10	12	15	20	25	30	40	50	70	75	80	100	140	150	160	200	210	220	250	260	270	280	300	380	400	420	430	500	540	560	600	610	630	770
Allied Chemical National Aniline Div.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32	—	—	—	—
Am. Enka Corp.	—	2	—	1-2	2	—	6	8	13	—	—	—	—	—	—	—	16-34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chemstrand Corp.	—	1	—	1	—	—	10	13	17	34	—	—	34	68	—	—	34	34	—	—	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—
E. I. du Pont de Nemours & Co., Inc.	1	1	1	1	7	—	10	—	17	34	—	26	34	68	—	—	34	34	—	—	17	—	—	—	—	68	68	—	—	—	—	—	—	—	—
	—	—	—	—	20	—	26	13-34	—	—	—	—	50	—	—	—	68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	34	—	—	—	—	—	—	34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	27	—	34	—	—	34	—	34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	27	—	14-34	—	—	—	28	—	—	—	—	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	20	27	—	34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	60	—	—	—	—	—	—	—	—	—
Bolta Products	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.005	—	—	—	—	—	—	—	—	—	—	—	.008	—	—	—	.010	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.005 x .020
Dawbarn Bros., Inc.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.008	—	—	—	.010	—	—	.008	—	—	—	—	—	.010
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.012	—	—	—	—	.005 x .020
Firestone Plastics Co.	Monofilament in 70, 100 and 124 denier																.005												.008						.010
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.005 x .020
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.006	—	—	—	—	—	—	.008	—	—	—	—	.010	—	—	—	.008 x .020 L	—	.012	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.008 x .020	—
National Plastic Products Co.	—	—	—	—	—	—	—	—	—	—	—	.004	—	—	—	—	.006	—	—	—	—	—	—	—	—	.009	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.008	—	—	—	—	—	—	—	.012	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.012	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Reeves Bros., Inc.	—	—	—	—	—	—	—	—	—	—	.004	—	—	—	.006	—	—	—	—	—	—	.008	—	—	—	.010	—	—	—	—	—	—	.012	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.008 x .020	—	—
Saran Yarns Co.	Monofilaments in 70, 100 and 124 denier																Multifilaments in 600/6, 600/12, 744/6, 1200/24, 1240/10, 2500/30, 2500/50, 4500/100, 6600/300																				
Southern Lus-Trus Corp.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.008	—	—	—	—	—	.010
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L.O.F. Glass Fibers Co.	—	—	—	—	—	—	—	—	102	—	—	—	204	—	—	—	204	—	—	—	—	—	—	204	—	408	—	—	—	—	—	—	204	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	408	—	—	—	—	—	—	612	—	816	—	—	—	—	—	—	408	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	204	—	—	—	—	—	—	612	—	—	—	—	—	—	612	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	300	—	—	—	—	—	—	—	600	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	408	—	—	—	—	—	—	—	612	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	816	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1244	—	—	—
Owens-Corning Fiberglas Corp.	—	—	—	—	—	51	—	—	102	—	—	—	204	—	306	—	204	—	—	—	—	—	—	204	—	408	—	—	204	204	—	—	204-408	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	102	—	—	—	408	—	—	—	—	—	—	306-408	—	816	—	—	—	408	—	—	612-816	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	612	—	—	—	—	—	—	—	—	122	—	—
Pittsburgh Plate Glass Co.	—	—	—	—	—	—	—	—	—	—	—	—	204	—	—	—	204	—	—	—	—	—	—	204	—	408	—	—	—	—	—	—	408	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	408	—	—	—	408	—	—	—	—	—	—	612	—	816	—	—	—	—	—	—	1224	—	—

TABLE 4

STAP

Cellulosic

Rayon

Deniers	Length in inches	Luster	Crimp	Spinning Systems
AMERICAN ENKA				
1.50	1-9/16, 2	bright & dull	none	Cotton
3.00	1-9/16, 2	bright & dull	none	Cotton
5.50	1-9/16, 2½, 3	bright & dull	yes	Cott. & Wool
8.00	3, 5	bright	yes	Carpet
15.00	3, 5	bright & dull	yes	Carpet
AMERICAN VISCOSE				
1.00*	1-9/16	bright	yes	Cotton
1.25	2¼	dull	yes	Cotton
1.50	1⅛	bright	none	Cotton
1.50	1-9/16	bright & dull	none	Cotton
1.50	1-9/16 & ½ SSB	bright	none	Cotton
1.50	2	bright & dull	none	Cotton
3.00	1⅛	bright	with & without	Cotton
3.00	1-9/16	bright & dull	with & without	Cotton
3.00	1-9/16 & ½ SSB	bright	none	Cotton
3.00	2	bright & dull	with & without	Cott. & Wool
3.00	2½	bright & dull	none	Cott. & Wool
5.50	1-9/16	bright & dull	yes	Cott. & Wool
5.50	2	bright & dull	with & without	Cott. & Wool
5.50	2½	bright & dull	none	Cott. & Wool
5.50	3 to 5	bright & dull	none	Worsted
5.50	5 to 7	bright & dull	none	Worsted
8.00	1-9/16	bright	yes	Carpet
8.00	3	bright	yes	Carpet
15.00	3	bright & dull	yes	Carpet
15.00	4	bright & dull	yes	Carpet
15.00	5 to 7	bright & dull	yes	Carpet
8.00	1-9/16	bright	with & without	Carpet
15.00	4	dull	with & without	Carpet
22.00	4	bright & dull	yes	Carpet
"Viscose 32A"				
1.50*	1-9/16	bright	none	Cotton

* 15% over regular strength; all others listed, regular strength.

Deniers	Length in inches	Luster	Crimp	Spinning Systems
COURTAULDS (ALABAMA) INC.				
1.50	1⅛	bright	none	Cotton
1.50	1-9/16	bright & dull	none	Cotton
1.50	2	bright & dull	none	Cott. & Non-Wov.
3.00	1-9/16	bright & dull	none	Cotton
3.00	1-9/16	bright & dull	yes	Cotton
3.00	2	bright & dull	none	Cott. & Wool
3.00	2	bright & dull	yes	Cott. & Wool
5.50	1-9/16	bright	none	Cotton
5.50	1-9/16	bright & dull	yes	Cotton
5.50	2	bright	none	Wool
5.50	2	bright & dull	yes	Cott. & Wool
5.50	3	bright	none	Wool
1.50	1-9/16	Coloray	none	Cotton
3.00	2	Coloray	none	Cott. & Wool
5.50	3	Black Coloray	none	Cott. & Wool
HARTFORD RAYON				
1.50	1½ & 2	bright	none	Cotton
8.00	3 & 6	bright	yes	Cott. & Wool
15.00	3 & 6	bright & dull	yes	Cott. & Wool

Acetate

Deniers	Length in inches	Luster	Crimp	Spinning Systems
CELANESE CORP.				
2.00				
3.00				
5.50				
8.00	any length	bright & dull	yes	all systems
12.00				
17.00				
35.00				
50.00				

also 2.5 and 5 den. Arnel Triacetate

Deniers	Length in inches	Lus
Acrilan Acrylic Fiber		
THE CHEMSTRAND CORP.		
2.0		
2.5 hi-bulk		
3.0	1-9/16 to 5	bright or
5.0		
8.0		
15.0		
Creslan Acrylic Fiber		
AMERICAN CYANAMID CO.		
3.0 hi-bulk		bright & at present limit
Dacron Polyester Fiber		
DU PONT		
1.25	1¼, 1½, 2, 2½ & 3	
1.50		semi-dull
3.00		
4.50	1¼, 1½, 2, 2½, 3 & 4½	
6.0		
Fiberfill		
Darlan Dinitrile Fiber		
B. F. GOODRICH CHEMICAL CO.		
1.5		
2.0		
3.0	1½ to 4½	bright or
4.5		
6.0		
8.0		
Dynel		
UNION CARBIDE CHEMICALS CO.		
2.0		
3.0		
6.0	any length from 1¼-5	semi-brig
12.0		
24.0		

AND FIBERS — SEPTEMBER 1957

ULOSIC YARNS

ERS

770	800	815	840	915	930	990	1050	1100	1120	1200	1225	1540	1580	1650	1750	1850	2050	2465	2520	2770	2920	3320	3624	3675	3720	5040	Types & Brand Names
																2100—15,000 and higher deniers as Specified											Caprolan deep-dye nylon, 1-Z HB & ½Z HBT
			136																								Nylenka, dull, semi-dull & bright
			140																								Nylon
	140		140																420							840	Nylon, various types
																					Also industrial Yarn 15.120/2520						
								250																			Color-sealed semi-dull Dacron bright dull
										180																	Teflon
x.020		4500 F.							.012 .008 x .020					.015 .009 x .030							.020 .013 x .030		.030				Saran (round) do flat oval
010 x.020									.012 .008 x .020					.015							.020						Saran (round) do eliptical
010 x.020									.012 .008 x .020					.0145	.021	.009 x .030			.013 x .030 L		.020						Velon (round) do (eliptical) Polyethylene, regular round Polyethylene, linear, round do do , eliptical
					.0145	.015	.009 x .030						.013 x .030														
				.009 x .030 .015										.020	.011 x .027												Nylon Monofil. round Polyethylene, linear, round do do , oval do branched, round Polystyrene, flat
				.015										.013 x .030	.020	.009 x .030		.023							.030		Reevon Polyeth. (round) (flat)
																											Saran
010									.012 .008 x .020					.015							.020 .013 x .030						Saran (round) do (eliptical)
		816 1632		612 900 1224 1836							816 1200 1224 2448	3060		1632 3264		1224 1800 1836	2040 4080	1632 2400 2448		1836 2700		3264	2448		2448		Glass Fibers (others in den. up to 10,000)
		816 1632		612 1836							816 1224 2448	3060		1632 3264		1224 1836	2040 4080	1632 2448		1836		3264	2448	2448			"Fiberglas" yarns
				612 1836							816 2448					1224				1836			2448				Fiber Glass Yarns

APLE

Luster	Crimp	Spinning Systems
ight or semi-dull	yes	all systems
ight & semi-dull t limited quantities only	yes	all systems
mi-dull	yes	
ight or semi-dull	set or unset	all systems
mi-bright	yes	all systems

Non-Cellulosic

Deniers	Length in inches	Luster	Crimp	Spinning Systems
Nylon				
AMERICAN ENKA				
3.0	various lengths	semi-dull		all systems
6.0		bright		
8.0		bright		
10.0		bright		
15.0		bright & semi-dull		
Tradename "Nylenka"				
DU PONT				
1.50	1⅛, 1½, 2, 2½, 3, 4½	semi-dull	yes	
2.20	1½	Type 420		
3.00	1⅛, 1½, 2, 2½, 3, 4½	bright & semi-dull	yes	all systems
6.00	1⅛, 1½, 2, 2½, 3, 4½	bright	yes	
15.00	1½, 3, 4½, 6½	bright	yes	
INDUSTRIAL RAYON CORP.				
1.5				
3.0				
6.0	1-1/16 to 9	bright or semi-dull	yes	all systems
8.0				
15.0				
22.0				
Orlon Acrylic Fiber				
DU PONT				
1.00	1½, 2, 2½ & 3			
2.00 3.00		semi-dull	yes	
4.50 6.00	1½, 2, 2½, 3, & 4½			
Type 39 Mixed denier, cut lengths			yes	Wool
Colorsealed in black only in 3.0 den. All available in regular or high shrinkage.				
Saran				
SARAN YARNS CO.				
16				
22	any length		yes	all systems
45				

Deniers	Length in inches	Luster	Crimp	Spinning Systems
Teflon				
DU PONT				
6.67	½ to 5			
Verel, Modified Acrylic Fiber				
EASTMAN CHEMICAL PRODUCTS				
2				
3		semi-dull		
5	any length	bright & dull	yes	all systems
8				
Vicara Zein Fiber				
VIRGINIA-CAROLINA CHEMICAL CORP.				
2, 3, 5, 7	any length	dull or bright	yes	
15	from ½ to 6	bright only	yes	all systems
Vinyon				
AMERICAN VISCOSE CORP.				
3.0	1¼	bright	slight	Cott. & Wool
3.0	2	bright	slight	Cott. & Wool
5.5	1	bright	slight	Cott. & Wool
5.5	3½	bright	slight	Carpet
Zefran				
THE DOW CHEMICAL CO.				
1.5				
2.0	1½-4½	bright & semi-dull	yes	all systems
3.0				
6.0				

TABLE 5 TOW

Cellulosic

Acetate

CELANESE CORP.

Filament Denier	Number of Filaments	Total Denier
2.0		89,000
3.0		137,000
5.5		139,000 Dull
5.5		198,000 Bright
8.0		234,000
17.0		326,000
50.0		240,000

Bright and dull, crimped and uncrimped.

Rayon

AMERICAN VISCOSE

Filament Denier	Number of Filaments	Total Denier
1.5, 3.0, 5.5	bright & dull	200,000
9.0	bright	

CELANESE CORP.

Filament Denier	Number of Filaments	Total Denier
1.5		200,000
3.0		200,000
5.5		200,000
8.0		207,000

Bright and dull, crimped and uncrimped.

Non-Cellulosic

Acrilan Acrylic Fiber

THE CHEMSTRAND CORP.

Filament Denier	Number of Filaments	Total Denier
2.0	120,000	240,000
2.5	120,000	300,000
3.0	120,000	360,000
5.0	72,000	360,000
8.0	45,000	360,000
15.0	30,000	450,000

Semi-dull.

Creslan Acrylic Fiber

AMERICAN CYANAMID CO.

3, bright or semi-dull, crimped (in pilot quantities only)

Dacron Polyester Fiber

DU PONT

Filament Denier	Number of Filaments	Total Denier
3.0	150,000	
4.5	100,000	
6.0	75,000	all 450,000

Semi-dull.

Darlan Dinitrile Fiber

B. F. GOODRICH CHEMICAL CO.

Filament Denier	Number of Filaments	Total Denier crimpset	Total Denier not crimpset
1.5	60,000	100,000	90,000
2.0	45,000	100,000	90,000
3.0	30,000	100,000	90,000
4.5	20,000	100,000	90,000

Dynel

UNION CARBIDE CHEMICALS CO.

Filament Denier	Number of Filaments	Total Denier
2	90,000	
3	60,000	
6	30,000	all 180,000
12	15,000	
24	7,500	

Semi-bright.

Nylon

DU PONT

Filament Denier		Number of Filaments	Total Denier not crimpset	Total Denier crimpset
3.0	semi-dull & bright	143,333	430,000	455,000
6.0	bright	55,000	330,000	345,000
15.0	bright	22,000	330,000	

Semi-dull and bright.

Orlon Acrylic Fiber

DU PONT

Filament Denier	Number of Filaments	Total Denier
2.0	235,000	
3.0	157,000	
4.5	104,500	all 470,000
6.0	72,300	

Semi-dull. Colorsealed in black only in 3.0 den.

Saran

SARAN YARNS CO.

Filament Denier	Total Denier
22 to 45	up to 300,000

Teflon

DU PONT

Filament Denier	Total Denier
6.67	4,000-9,000

Velon

FIRESTONE PLASTICS CO.

70, 100, 124 — in skein form, cut to required length

Vicara Zein Fiber

VIRGINIA-CAROLINA CHEMICAL CORP.

Filament Denier	Total Denier
2	540,000
3	750,000
5	540,000
7	525,000
15 (experimental quantities only)	594,000

Zefran

THE DOW CHEMICAL CO.

Only small tow sizes and pilot plant quantities. Commercial-sized 270,000 denier tow available upon completion of production facilities.

YARN PRODUCERS SALES O

Allied Chemical
National Aniline Division
261 Madison Ave.
New York 16, N. Y.

American Bemberg
261 Fifth Ave.
New York 16, N. Y.

American Cyanamid Co.
30 Rockefeller Plaza
New York 20, N. Y.

American Enka Corp.
530 Fifth Ave.
New York 36, N. Y.

American Viscose Corp.
350 Fifth Ave.
New York 1, N. Y.

Beaunit Mills, Inc.
261 Fifth Ave.
New York 16, N. Y.

Bolta Products
Div. General Tire & Rubber Co.
70 Garden St.
Lawrence, Mass.

Celanese Corporation of America
180 Madison Ave.
New York 16, N. Y.

The Chemstrand Corporation
350 Fifth Ave.
New York 1, N. Y.

Continental Can Co.
100 East 42nd St.
New York 17, N. Y.

Courtaulds (Alabama) Inc.
600 Fifth Ave.
New York 20, N. Y.

Dawbarn Bros., Inc.
Waynesboro, Va.

The Dow Chemical Co.
Textile Fibers Department
Lee Hall, Va.

E. I. du Pont de Nemours & Co., Inc.
Textile Fibers Dept.
Wilmington 98, Del.

Eastman Chemical Products,
260 Madison Ave.
New York 16, N. Y.

Fair Haven Mills, Inc.
Fair Haven, Vt.

Fairtex Corp.
1808 Liberty Life Bldg.
Charlotte 2, N. C.

Firestone Plastics Co.
307 Fifth Ave.
New York 16, N. Y.

B. F. Goodrich Chemical Co.
Div. of B. F. Goodrich Co.
3135 Euclid Ave.
Cleveland 15, Ohio

Hartford Rayon Co.
Div. of Bigelow-Sanford Carpe
140 Madison Ave.
New York 16, N. Y.

Industrial Rayon Corp.
500 Fifth Ave.
New York 36, N. Y.

L·O·F Glass Fibers Co.
1810 Madison Ave.
Toledo 1, Ohio

Lurex Yarns
Div. of The Dobeckum Co.
3301 Monroe Ave.
Cleveland 13, Ohio

Malina Company
125 West 41 St.
New York 36, N. Y.

Metlon Corporation
Div. of Acme Backing Corp.
432 Fourth Ave.
New York 16, N. Y.

National Plastic Products Co.
Odenton, Md.

OFFICES

ucts, Inc.

New Bedford Rayon Division
Mohasco Industries, Inc.
New Bedford, Mass.

North American Rayon Corp.
261 Fifth Ave.
New York 16, N. Y.

Oriented Plastics, Inc.
Pembroke, N. H.

Owens-Corning Fiberglas Corp.
Textile Products Division
598 Madison Ave.
New York 22, N. Y.

Pittsburgh Plate Glass Co.
Fiber Glass Division
One Gateway Center
Pittsburgh 22, Pa.

l Co.
o.

Poliafil, Inc.
302 Fig St.
Scranton, Pa.

Polymers, Inc.
Middlebury, Vt.

Carpet Co.

Reeves Brothers, Inc.
54 Worth St.
New York 13, N. Y.

Reynolds Metals Co.
Third and Grace Sts.
Richmond, Va.

Saran Yarns Co.
Odenton, Md.

Skenandoa Rayon Corp.
261 Fifth Ave.
New York 16, N. Y.

Co.

Southern Lus-Trus Corp.
P. O. Box 3386
Jacksonville 6, Fla.

Standard Yarn Mills, Inc.
83rd & Cooper Ave.
Glendale, N. Y. C.

Union Carbide Chemicals Co.
Div. Union Carbide Corp.
30 East 42nd St.
New York 17, N. Y.

orp.

Virginia-Carolina Chemical Corp.
Fiber Division
99 Park Ave.
New York 16, N. Y.

ts Co.

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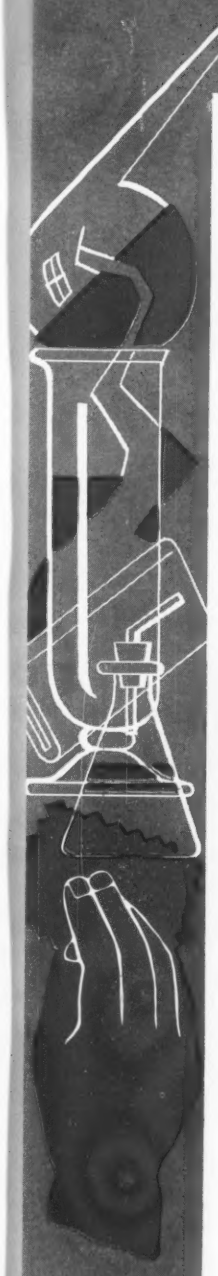
DYEING and FINISHING SECTION



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Geigy, represented in all corners of the globe, continues to contribute many outstanding achievements to the textile industry, and wishes, at this time to pledge itself to continue to strive for still greater contributions in the years ahead, keeping the faith with textiles by furnishing the industry with products of progress.

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Division of Geigy Chemical Corporation, Saw Mill River Road, Ardsley, New York
BRANCHES IN ALL TEXTILE-PRODUCING CENTERS

How to finish dacron - cotton blends

By R. L. Hunter

IN THE relatively short time since blends of Dacron polyester fiber with cotton were introduced, an outstanding growth has taken place. Since 1953 when one fabric style was developed for one end use, the outstanding properties of these blends have caused penetration into areas ranging from filmy lingerie to heavy work clothing, accompanied by great increases in yardage of fabrics sold.

This rapid growth obviously has depended in large measure on the development of adequate processing technology for spinning, weaving, dyeing and finishing. In finishing, efforts have been directed toward adapting blends of Dacron with cotton to the high speed, low unit cost processes used for all-cotton fabrics with good success. With a few modifications to accommodate the Dacron, standard cotton finishing routings and procedures produce highly satisfactory results on the blend fabrics.

Before a discussion of where and how the typical cotton finishing procedure is modified for blended fabrics, some of the problems peculiar to Dacron and how they are overcome will be examined so that it may be better understood why these modifications are necessary.

Pilling

Pilling is a word used to describe the formation of small fuzz balls on the surface of the fabric during wear. The control of pilling has been the subject of much study. Many ideas have been evaluated; some of which have turned out to be practical, others not. Experience has shown, however, that the two most widely applicable and successful processes for controlling pilling are heat setting and singeing.

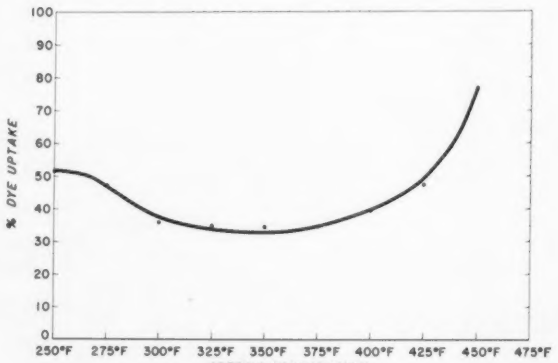
Heat Setting

To be most effective for pilling control, heat setting should be done in the temperature range of 385 upwards to 430°F. Once the fabric reaches these temperatures the dwell time is not too important since setting takes place almost instantaneously for all practical purposes. Setting can be done on a variety of equipment, including gas-fired, clip-tenter frames, resin curing ovens, radiant heat units, or hot-roll contact types of machines. The dwell time for the fiber to reach the setting temperature will vary from one type of equipment to another depending on the efficiency of heat transfer.

Generally speaking, contact and radiant heat machines require less dwell time than hot-air types of units. Fortunately, equipment is avaliable in many finishing plants which can be adapted easily to the heat-setting of the blends of Dacron and cotton. The most common types of equipment found are resin curing ovens or gas-fired, clip-tenter frames, and here, 30 to 45 seconds exposure time generally is found to be sufficient for the fabric to reach the setting temperature.

Dacron polyester fiber displays a certain amount of thermal shrinkage when exposed to heat and this presents a problem of width control in equipment other than clip-tenter frames. On the roller curing ovens, "Air-Lay" boxes, and the contact and radiant type machines, which do not have devices for holding the cloth at width, this can be compensated for by framing the goods to gray width prior to heat setting. The fabric then shrinks during setting to slightly over finished width.

Heat setting at these high temperatures also creates dyeability problems. As can be seen in Figure I,



EFFECT OF SETTING TEMPERATURE ON DYE UPTAKE

Fig. I

heat setting prior to the aqueous dyeing of Dacron reduces the dyeability in the range of 275 to 390°F. Above 390°F. the dyeability sharply increases. This means that even heat exposure across the fabric must be assured by adequate engineering if shading problems are to be avoided. On the other hand, this effect of preheat setting on dyeability is not observed in the Thermosol dyeing process.

(Continued on Page 86)

Co-authors of this report with Mr. Hunter are C. W. Holweger, Jr., and R. E. Ritter. All three are members of the technical service section of the textile fibers department, Du Pont Co., Wilmington, Del.

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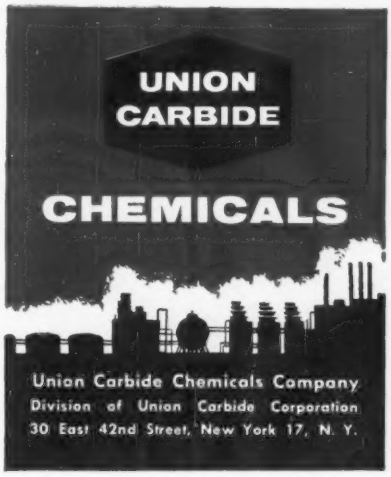

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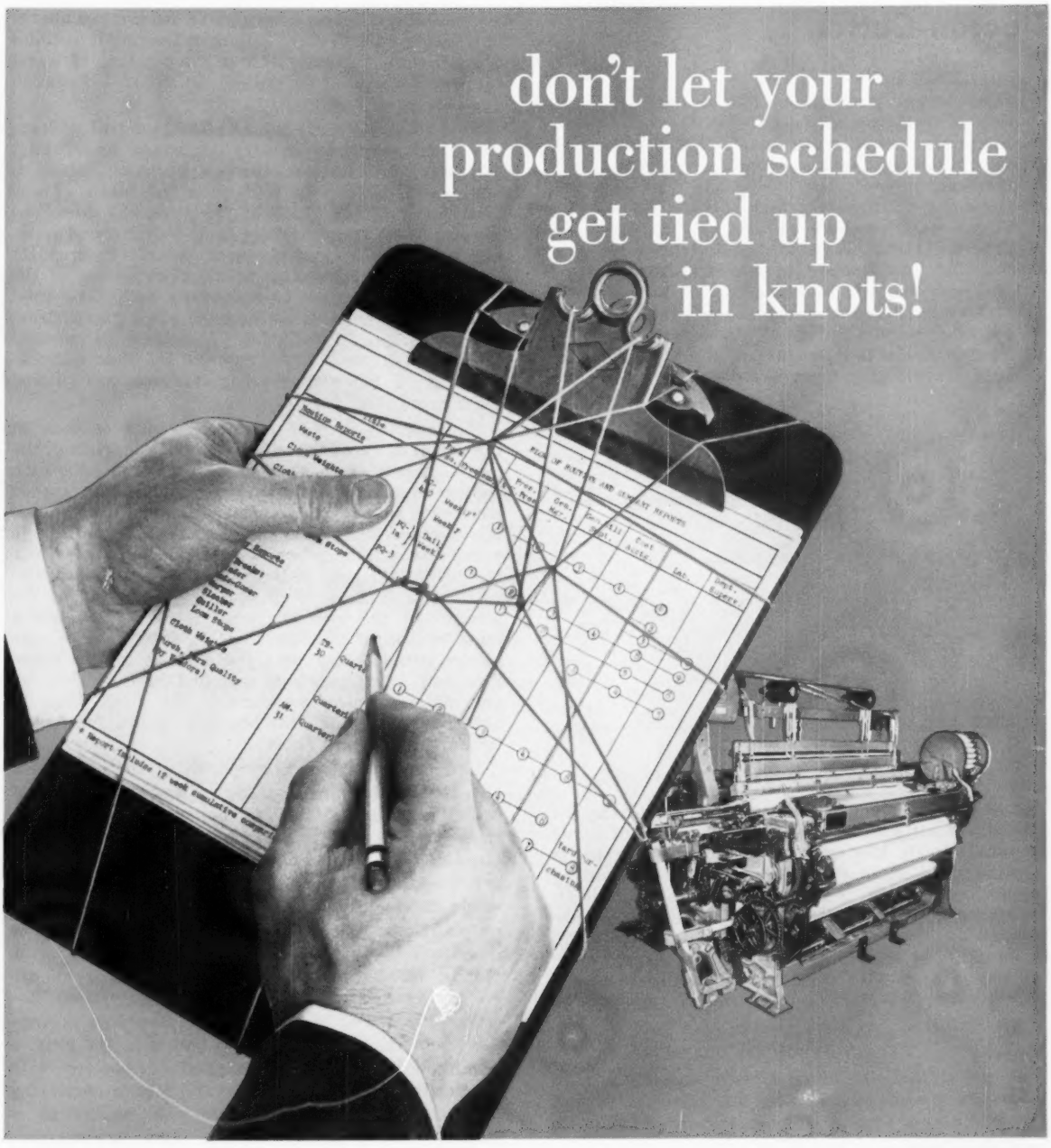

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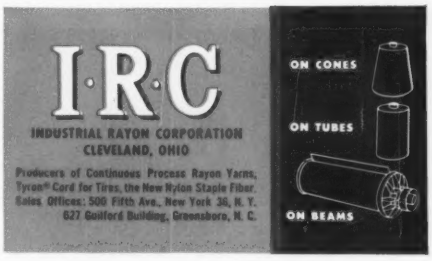
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Dacron-Cotton

(Continued from Page 82)

In heat setting after dyeing, dye sublimation is apt to occur at temperatures over 350°F. This can lead to shading and over-all shade change if dyes with adequate sublimation fastness are not carefully selected. A significant advance has been made here with the development of the "thermal shock" heat-setting technique which utilizes radiant heaters operating at 1200 to 1400°F. With this unit, fabrics reach a heat-setting temperature of approximately 400 to 420°F., with as little as one second exposure time. This short exposure eliminates dye sublimation as well as other negatives that are apt to be encountered with conventional heat setting. A mill scale machine (Figure II) utilizing these principles has been designed and built and is currently located at the Du Pont Chestnut Run Laboratory. Thousands of yards of satisfactorily heat-set fabric have attested to its practicability. It appears to be ideal for heat setting piece-dyed or yarn-dyed fabrics; promising leads on its application to Thermosol printing and dyeing are being tested further. While no units are operating in the trade as yet, the advantages cited coupled with its low investment and operating cost undoubtedly will enourage many mills to adopt this technique in the future.

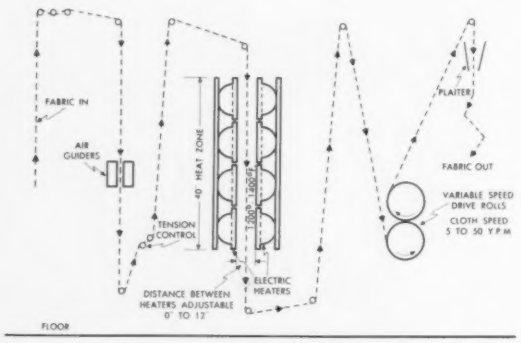

Fig. II

Singeing

In the finishing of cotton fabrics, singeing is used merely to remove long surface fuzz from the face of the fabric as a step in the preparation of the cloth for finishing. However, because of the marked ability of singeing to control the pilling of Dacron, it assumes a much more important role in the finishing of blend fabrics. Because of its critical nature, this operation deserves close scrutiny.

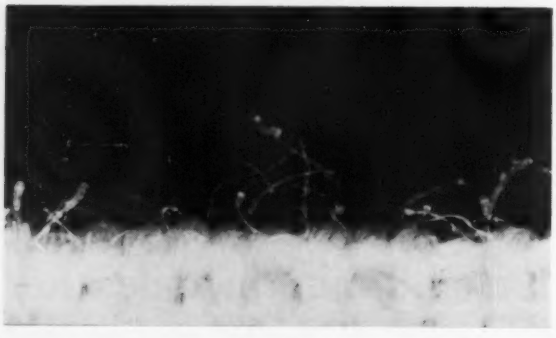

Fig. III

To do a satisfactory job of pilling control, a deep, close, and even singe is very important. Apparently, the flames fuse back the surface fibers of Dacron to tiny melt balls on the surface of the fabric. These melt balls, or beads, act as "locks on the doors" to prevent fibers from working their way out and causing trouble during subsequent wear. (Figure III) Singeing also contributes to the heat setting of the fabric. Various types of equipment have been used for singeing, the most common type being open flame burners arranged for either horizontal or vertical fabric travel. Recent work in the Du Pont Laboratories on a hot-roll singeing machine has proved quite promising.

Singeing, to be most effective, should be done at the slowest speed possible without degrading the fabric. A low, even flame is the best type since high flames tend to be wild and the high fabric speeds necessary to prevent burning the cloth aggravate this wildness. A double singe has been found to give maximum pilling protection and also to minimize the size of the melt balls in the fabric surface. The small size of these melt balls is important to the comfort of the ultimate wearer. One trick which permits the use of lower singeing speeds and higher flames without degrading the cloth is to wet singe. The cloth is wet out and mangled prior to singeing and the remaining moisture in the cloth helps to absorb some of the heat but still allows the flames to melt the surface fibers.

Since good singeing is so critical to the production of high-quality fabrics of Dacron and cotton, it is of prime importance that the singer be properly designed to give a close, even singe and that it be maintained in top operating condition. Many times the ordinary singer found in a cotton finishing plant, while satisfactory for singeing gray cotton cloth, requires much closer control and higher maintenance standards to do a satisfactory singeing job on the blends. Many yards of fused, dirt-spotted goods can be avoided if this is taken into consideration. Because of this, and because it is not desirable to singe fabrics blended of Dacron and cotton in the gray, a number of mills have equipped themselves with singers especially suitable for the blends employing the principles outlined. While new equipment is initially costly, saving one lot from irrecoverable damage may justify the expense.

There are other pilling control techniques which have been developed that should be mentioned. Brushing lightweight fabrics, or napping and shearing heavier weight cloth ahead of heat setting and singeing helps to dispose of poorly anchored long fibers which are apt to work loose in later wear. As such, these operations offer additional help with marginal fabrics. In addition, several secret chemical processes have been developed in the industry which do a highly creditable job of controlling pilling.

The Du Pont Co. has also explored the control of pilling through chemical means, and a process has been developed which involves padding polyethylene glycol (Carbowax* 600) on the desized and scoured

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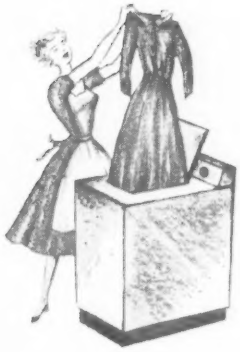
these finishes achieve the finest in wash and wear fabrics



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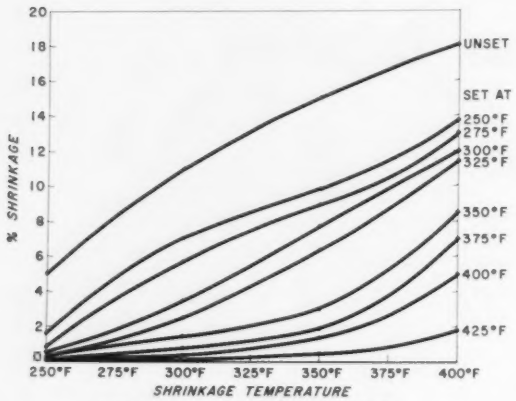
but undyed fabric, drying, then curing at 430°F. on a contact heat-setting machine.

This PEG process, as it has been nicknamed, does a very good job of eliminating pilling on a wide range of fabrics containing Dacron and is particularly applicable to blends of Dacron with cotton. In fact, on many styles it has eliminated the need for singeing. Its major drawback is its effect on dyeability. As mentioned earlier, the dyeing properties of Dacron are sensitive to its previous thermal history and this treatment seems to magnify this sensitivity. Consequently, for practical purposes, its application is limited to white fabrics or to those where only the cotton component is dyed. Furthermore, the additional cost penalty of $0.01 per yard over regular finishing cost limits interest in its use to fabrics such as oxfords, basketweaves, etc., where conventional heat setting and singeing may not produce adequate control of pilling.



EFFECT OF SETTING TEMPERATURE ON DIMENSIONAL STABILITY OF FABRICS

Fig. IV

Dimensional Stability

The dimensional stability of the Dacron must be accommodated. Since Dacron will shrink upon exposure to heat, serious shrinking problems in laundering or pressing garments can be avoided by adequate heat setting in finishing. Thus, heat setting becomes a double edged knife to control dimensional stability as well as pilling. Heat setting at a temperature 50°F. higher than the subsequent heat exposure to be expected in garment use is usually a safe rule of thumb to follow. Figure IV shows the shrinkage obtained on heat-set fabrics at various dry-heat exposures.

Heat setting does not altogether compensate for the shinkage of the cotton component in washing, and unless the blend fabrics are handled completely relaxed through finishing, about four % residual shrinkage by the CCT-191-b test (commonly called the Sanforized* wash test) will result. Thus, the classic means for controlling dimensional stability on all-cotton fabrics are employed on fabrics of Dacron and cotton; these are mercerizing, resin treatment and compressive shrinking.

It must be remembered that these operations affect only the cotton component and must be combined with heat setting to provide adequate dimensional stability of the blend. Tests have shown that the combination of heat setting at 380 to 400°F. with mercerizing and compressive shrinkage will produce fabrics with less than 1% total residual shrinkage after 10 Sanforized wash tests—a performance better than that obtainable on all-cotton fabrics.

While this doesn't have much to do with finishing of blends of Dacron and cotton, this point should be mentioned since some shrinkage problems have been encountered in the collars of shirts of Dacron and cotton. It has been found that the collar shrinkage problem experienced on these shirts stems from inadequately heat-set interliner fabric and not from the body fabric of Dacron and cotton. Heat-setting these interliner fabrics of 100% Dacron filament at 420°F. is most helpful in minimizing this shrinkage during washing and pressing.

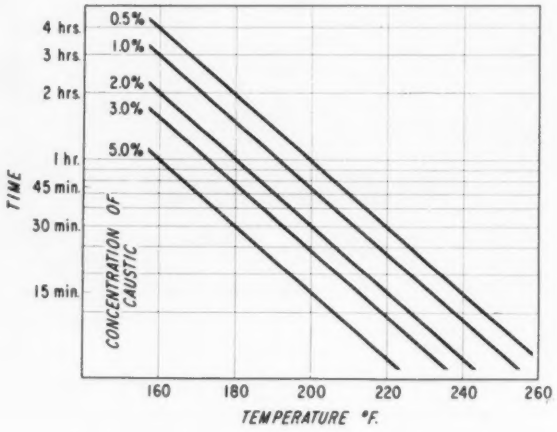


Fig. V

Effect of Alkali

The alkaline sensitivity of Dacron is somewhat greater than that of cotton. Polyethylene terephthalate is hydrolized by strong alkali and the product of this hydrolysis is soluble in water. Alkali affects Dacron fibers so as to gradually, but uniformly, reduce them in denier until they are completely dissolved, at a rate which is determined by the time and temperature of exposure and the concentration of alkali.

These three factors, (time, temperature, and concentration) are related logarithmically; Figure V shows the times and temperatures of exposure for various concentrations of caustic soda which result in negligible loss in fabric strength. The conditions represented by areas to the left and below the curves are safe to use, while conditions to the right and above the curves would cause noticeable strength loss in the fabric. For example, 30 minutes in 1% caustic soda at 210°F. is safe, but the same exposure in 3% caustic would cause serious loss of strength. However, one-and-one-half hours in 3% caustic would be safe if the temperature were maintained at 160°F.

This factor is important to finishing blends of Dacron and cotton since many cotton finishing operations involve the use of strong alkalis. Processes such as kier boiling with strong caustic solutions for mote

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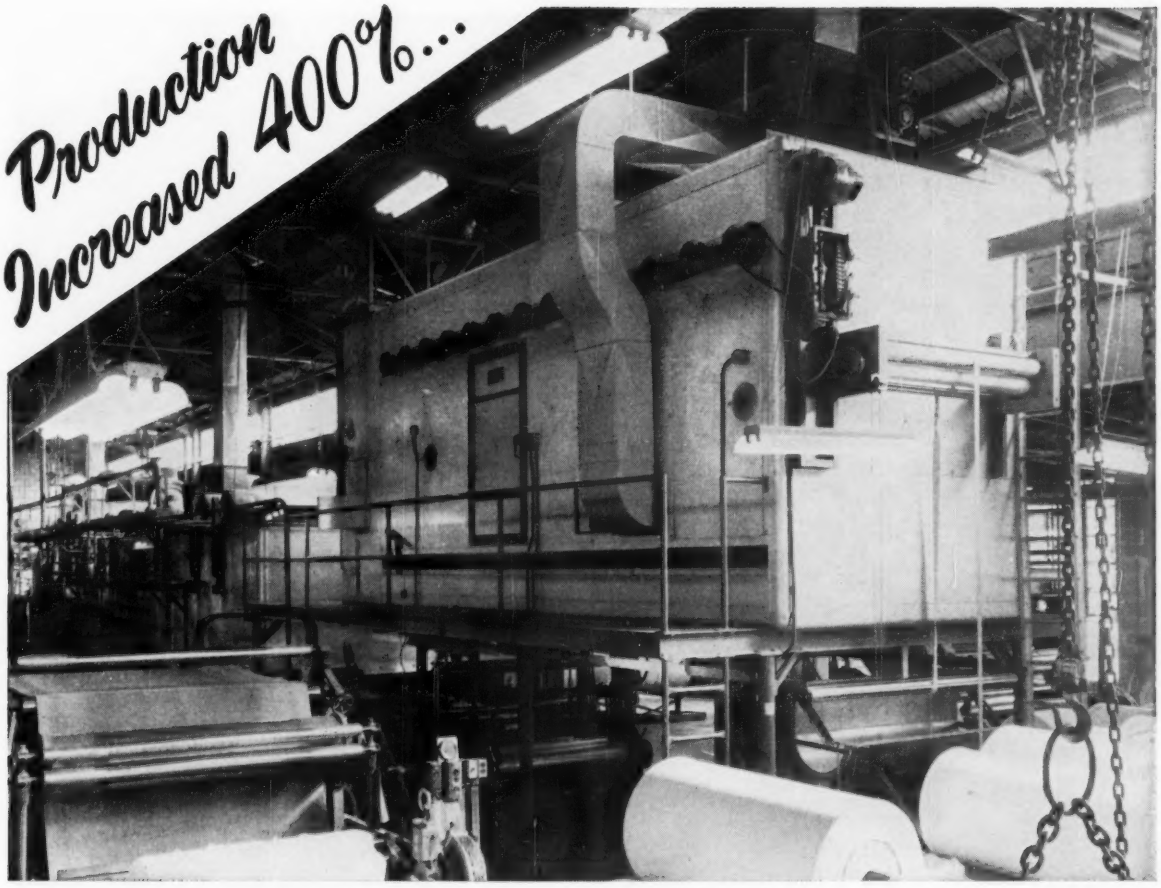
(Continued on Page 92)



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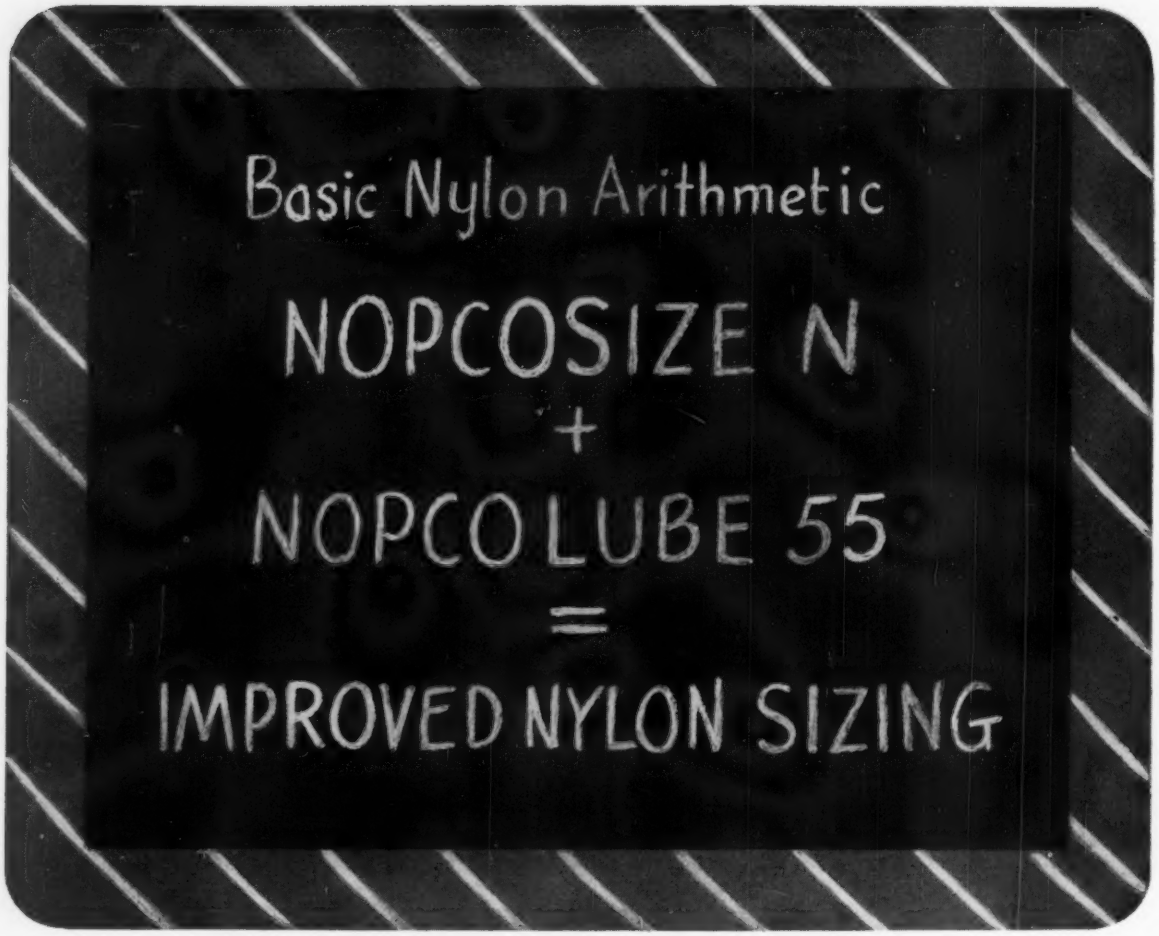

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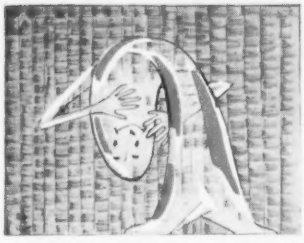

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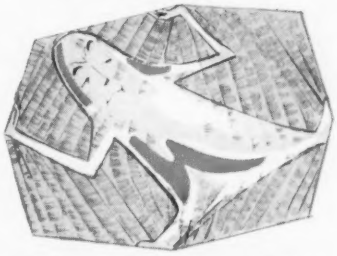

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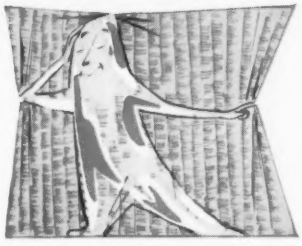

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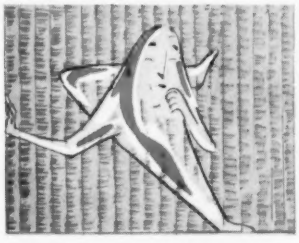

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Dacron-Cotton

(Continued from Page 88)

removal are done under such conditions as to be very harmful to Dacron and should be avoided. On the other hand, Du Pont "Solomatic" bleaching or even two-stage, J-Box bleaching can be done much more safely, even though they involve somewhat high pH's and high temperatures. Under these circumstances, the absorbency of the cotton lends assistance by soaking up the excess caustic and keeping the surface hydrolysis of the Dacron fiber to a minimum. However, samples should be tested under the actual conditions existing in the plant before large yardages are committed in order to assure no serious strength loss.

While very strong caustic is used for mercerizing, the times and temperatures of exposure are so low that fiber-strength loss is negligible.

Finishing Sequences

"Dacron" Undyed (White and pastel shades)

The routing for finishing of the fabrics of Dacron and cotton in white or pastel shades will now be compared with a typical procedure used for all-cotton fabrics. It can be summed up in a sentence. Except for a change in the order of singeing and the addition of heat setting, the blend fabrics are processed by a normal cotton routine at conventional speeds. Figure VI shows the comparison.

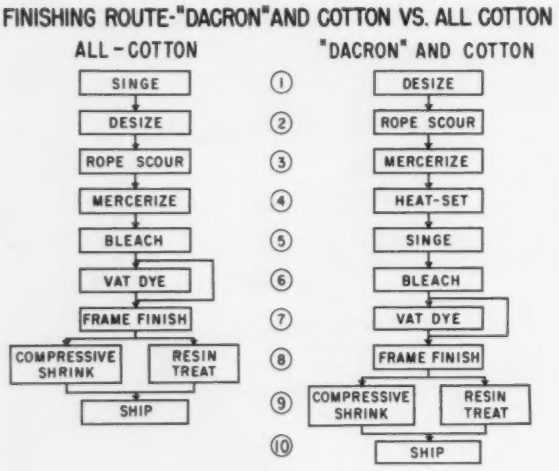

Fig. VI

The first question apt to be asked is, "Why eliminate the gray singe?" Many mills do gray singe but it is generally a dangerous practice for these reasons:

1. The sizes, oils, grease, and gray mill dirt can very easily be "set" into the cloth if exposed to heat. Once set, they are very difficult to remove.

2. Loom non-uniformities and reediness can also be "set" into cloth by singeing and are very difficult to even out in subsequent wet processing.

3. The gray singe has little effect toward pilling control since the size film protects the long fibers from the flames. Thus singeing for pilling control has a greater effect if done after the size is removed which explains why singeing is relocated to just prior to bleaching.

Rope soaping is a fairly straightforward process commonly used for all-cotton fabrics, but we have found additional benefits for the blends. When done in a modified dolly-washer at temperatures approaching the boil, a considerable amount of evening-out takes place. Reed marks are minimized and a much better appearing fabric results, particularly in broadcloths and poplins.

Next is mercerizing. Why is this beneficial to the blend? For the same reason it is beneficial to all-cotton fabrics. The dye affinity and hand of the cotton is improved, the fabric becomes more lustrous and it aids in dimensional stability. Incidentally, tests have indicated that mercerizing in the gray will quite efficiently remove many of the heavy sizing and wax deposits that are put on the warps to make them weave better and which give the finisher a lot of trouble at times.

If heat setting is to be done on equipment where no width control is provided, framing before heat setting, as mentioned before, is done at gray width to control final finished width. If setting is to be done on gas-fired, clip-tenter frames, this step will not be necessary and setting can be carried out one-half to one inch over final finished width. The principles of heat setting already have been described in detail. Heat setting and singeing are done prior to bleaching so that any dirt picked up during these operations can be removed.

Standard peroxide bleaching either in a kier or a J-Box will do a very satisfactory job on the blend. While peroxide will not bleach Dacron polyester fiber to any extent, this fiber is white as manufactured and does not require bleaching. Incidentally, it is very important to heat set the goods before bleaching by these methods to prevent forming permanent creases in the fabric during bleaching.

If it is desired to bleach the Dacron as well as the cotton, it can be done by using two grams per liter of Textone* sodium chlorite with one-half gram per liter of nitric acid. Either procedure will produce a very acceptable initial white on the blend. A double bleach, Textone followed by peroxide, while not producing an initial white any more satisfactory than either one alone, has shown some advantage in durability.

Pastel shades of excellent quality, appearance, and fastness can be dyed with vat dyes after bleaching by any of the standard methods.

Blueing and fluorescent agents can be applied in rinsing after bleaching or in a starch mangle. Some of the fluorescent white dyes such as Uvitex** ER Conc. that are substantive to Dacron which have recently come on the market, have also shown promise.

Finishes such as cationic softeners can be applied during frame finishing which is followed by compressive shrinking.

Thus, it can be seen that blends of Dacron with cotton require only minor modifications to the standard all-cotton finishing routine, thereby permitting the application of the high speed, low unit cost approach to the finishing of this blend.

Dacron Dyed (medium and dark shades)

If the Dacron is to be dyed to medium and dark shades, a slightly different routine is suggested. Fabrics that are dyed by conventional carrier or pres-

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(Continued on Page 96)

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MITCHELL-BISSELL THREAD GUIDES

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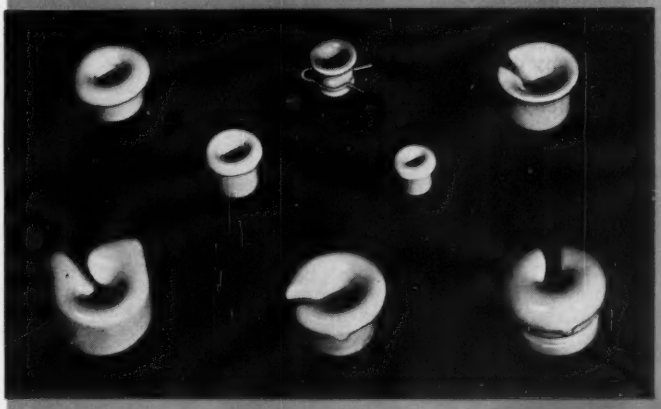
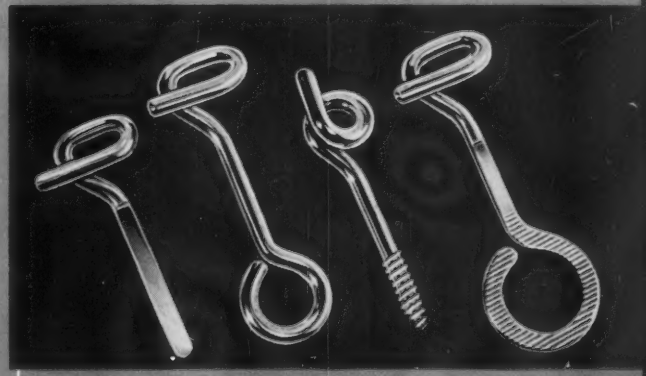


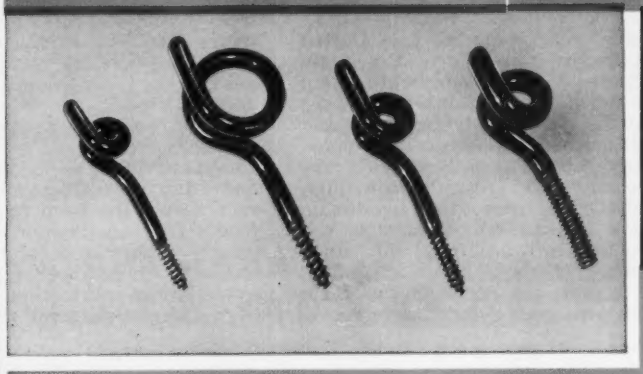
Above—"BLUE SATIN FINISH" PORCELAIN GUIDES.
An exclusive development of Mitchell-Bissell—guides with this finish are more resistant to thread wear than any glazed porcelain guides ever offered the industry. "Blue Satin Finish" Guides, instead of being shiny and glass-like, have a surface of thousands of small rounded grains closely packed together. Reduced wear and longer guide life result because, by breaking the continuity of contact between yarn and guide, friction is reduced. * U. S. Pat. No. 2,152,136.

Left—WHITE GLAZED PORCELAIN GUIDES.
The Mitchell-Bissell Company originated the use of porcelain as a thread guide for the textile industry. The white Glazed Porcelain Guides shown here are representative of thousands of patterns that have been sold to all branches of the textile industry since this company was founded over seventy years ago. Improved in quality from time to time they are still "standard."

Right—CHROMIUM PLATED STEEL GUIDES.
The plating on Mitchell-Bissell Chromium Plated Steel Guides is harder and denser than on any other wire guides. Our methods of fabricating and polishing develop a surface smoothness, with a mirror finish far beyond usual commercial standards. Because of their superior resistance to thread wear these guides are used extensively on machinery for processing rayon and nylon yarns and also for many other severe applications. Also available in Satin Finish.

Below—ENAMELED IRON GUIDES.
Where wire guides are desired, and service conditions do not require chromium-plated guides, our Enameled Iron Guides give exceptionally good service, with a low initial cost. Made with the care and craftsmanship that are standard practice on all Mitchell-Bissell products, these are recommended as centering and ballooning guides, and for cotton, woolen and other soft yarns.





MITCHELL-BISSELL CO.

TRENTON, N. J.

Southern Representative: R. E. L. Holt, Jr., & Associates
Greensboro, N. C.

New MACHINERY

New EQUIPMENT

Aluminum Twister Bobbin

A new, all-aluminum twister bobbin has been introduced by Allentown Bobbin Works, Inc. The bobbin has a grip knob which includes a special recessed ring for color code identification for different yarns and operations. The all-

aluminum barrel and heads are brazed together with the bobbin completely anodized to prevent corrosion of any kind. In over two years of service, the company reported, not one bobbin has failed in service. It is also said that the bobbins will withstand continual steaming and twisting of high tensile nylon yarns. *For further information, write the editors.*

Gill Reducing Machine

Holdsworth Manufacturing Co., Inc. now has in full scale production its new "Super Gill" reducing machine. Gill reducing is a key operation in the preparation of roving for worsted and synthetic yarn spinning, and for blending natural and synthetic fibers. Tests have shown the new machine will boost production by as much as 50%, the company said.

The design of the Super Gill has been simplified to reduce the number of working parts and thus cut maintenance costs. Also incorporated in the machine is a variable speed drive which permits the operator to make draft changes quickly by simply setting a dial while the machine is in operation. *For further information, write the editors.*

Humidity Indicator

A remote humidity indicator, reported to be easy-to-use and extremely versatile, is now available from Serdex, Inc. The unit is said to have wide application in laboratory, research and in plant operations. The indicator can be located in any office, etc., away from the closed area to be measured. The company reports readings to a guaranteed accuracy of plus or minus 1½%, with no fire or explosion hazards since operation of the instrument is completely mechanical. *For further information, write the editors.*

Skein Dyeing Machine

A new, high-temperature and high-pressure skein dyeing machine, made by Scholl Ltd., is now

being marketed in the United States by Cosa Corp. Especially adapted for high temperatures up to 230 degrees F., the skein dyer can be used for dyeing wool and all synthetic materials. The company reports it will provide extremely good results with high bulk Orlon, since it uses the double stick method which controls the amount of bulking. No stock marks, channeling or wrinkling, it is said, can occur in the yarn. The machine also includes a special pump which assures uniform dye liquor circulation at all points. CLT is available with capacities of 25, 55, 125 and 250-pound dye lots. *For further information, write the editors.*

Tumble Pilling Tester

A new random tumble pilling tester, the commercial version of the same tester developed by the Textile Fibers Department of Du Pont, has been announced by Atlas Electric Devices Co. The com-

pany reports that the tester produces pills and fuzz which correlate well with actual end-use performance in respect to number, size and appearance. The realistic appearance of the test specimens permits rating by subjective evaluation techniques. The instrument is available with two, four or six test chambers per machine and requires only 12½ to 18½ inches of laboratory bench space. *For further information, write the editors.*

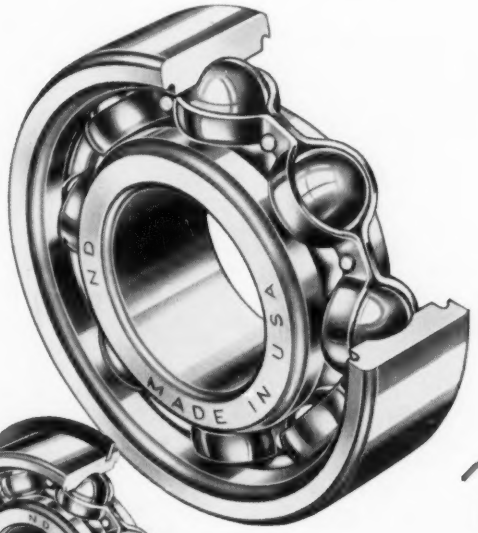
Nylon Pattern Chain

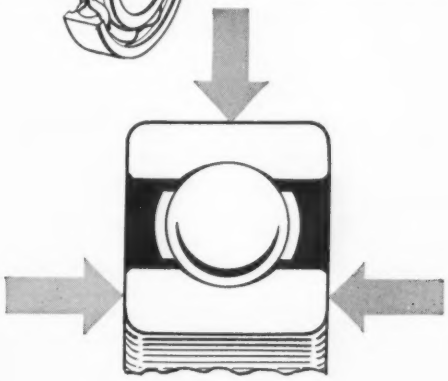
A new development in loom parts, a nylon pattern chain developed by the H. F. Livermore Corp., provides a solution to many problems encountered in the weaveroom, according to the company. Made of nylon, the links, sinkers and risers are especially designed to meet the needs for increased production and improved quality. The use of nylon is said to reduce weight by about 66% as compared to steel, bronze, brass and other metals previously used. As a result, the loom requires less power and can function more efficiently. Lubrication of the entire chain is eliminated inasmuch as nylon is self-lubricating. *For further information, write the editors.*

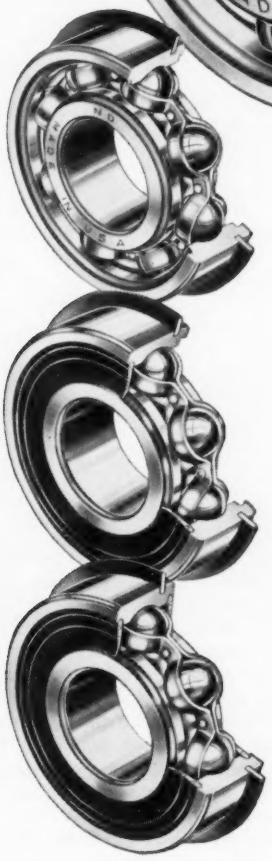
FACTS

about

NEW DEPARTURE BALL BEARINGS







The Word *Versatile*

Fits Like A Glove!

Fits because—this basic New Departure ball bearing, more widely used than any other antifriction type, does much more than carry RADIAL loads—it locates the shaft it supports against THRUST LOADS FROM BOTH DIRECTIONS equally well!

Fits because—with a simple snap ring added, it does away with inside housing shoulders, simplifying mounting and cutting machining costs!

Also—with efficient Sentri-Seal added, without change in exterior dimensions, it eliminates a separate outside closure—assures protection from outside dirt!

And—with Sentri-Seals on both sides, this same basic bearing does away with all separate seals, eliminates all need for lubricating fittings—requires no attention for greasing!

Finally—it is a long-lived, non-separable unit that calls for no shims or other devices for periodical adjustments.

So, specify New Departures of the type that assures you maximum application proficiency and economy.

BALL BEARINGS MAKE GOOD PRODUCTS BETTER

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

Dacron-Cotton

(Continued from Page 92)

sure piece-dyeing methods are considered first. The recommended sequence is outlined in Figure VII.

BATCH DYEING OF "DACRON" FINISHING ROUTE

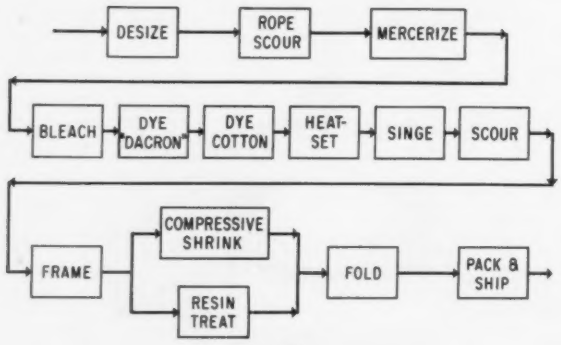


Fig. VII

Here, dyeing of the Dacron prior to heat setting or singeing is suggested to minimize the effect of heat on dyeability. Singeing in particular is to be avoided prior to dyeing since the tiny melt balls on the surface of the fabric absorb dye very readily and give the fabric a specked, unlevel appearance. Bleaching is done only if the shade is such that a bleached bottom will produce a better over-all appearance.

Where Thermosol piece dyeing is used, the following sequence is suggested:

Desize
Scour
Bleach if necessary
Dry
Thermosol
Singe
Frame Finish
Compressive Shrink

This offers advantages over conventional dyeing in that heat setting and dyeing are done simultaneously.

Yarn-Dyed Fabrics

Yarn-dyed goods are handled in a manner very similar to whites. However, heat-setting temperatures on hot air or contact machines should be held to below 350°F. to minimize dye sublimation.

Yarn-dyed fabrics can be bleached with either chlorine or peroxide. All of the recommended dyes for Dacron in blends with cotton display excellent fastness to chlorine bleaching even in heavy shades. The fastness to the standard peroxide bleaching tests at 212°F. is more borderline but tests have demonstrated that the full range of shades can be bleached with peroxide satisfactorily either in a kier, beck, or Solomatic system at 180°F. with no staining of the white yarns.

Calendering

By employing the thermoplastic properties of Dacron some interesting effects can be obtained by calendering. For example, Schreiner or plain calendering with 30 tons of pressure at 350°F. before heat setting will produce a fabric with better cover, better uniformity, and a certain amount of durable luster. Embossing can be done at 30 tons nip pressure and 350°F. on completely finished heat-set fabrics with excellent durability. This is because Dacron, unlike nylon, is quite thermoplastic and can be reformed and remolded at will, even after being heat set in a flat condition. This property also permits the formation of permanent pleats by normal pleating processes on completely finished goods. This, obviously, is a distinct advantage to the converter and cutter.

Resin Treatments

If resins are applied to blend fabrics, their already excellent wash-wear performance is enhanced mainly because the initial resilience of the cotton component is brought up to that of the Dacron polyester fiber. Losses in tensile strength of the blend fabrics are negligible with resination since the Dacron is unaffected by the resin. While durability of this treatment is the same as it would be on all-cotton, the wash-wear performance obviously can never get below that built into the fabric. One of the best formulations we have found is a combination of 4 to 5% Zeset S fabric stabilizer solids on weight of fabric with 1.5 to 2% Nalan RF water repellent.

Resins also impart a degree of pilling resistance, and, as adjuncts to good mechanical finishing, are quite effective. However, resins should not be depended upon entirely for pilling control since the effect is not durable for the life of the garment.

Quality Control

The usual quality factors measured for all-cotton fabrics are paralleled when considering the blend fabrics. Such parameters as dimensional stability, colorfastness, and fabric strength are determined in the blend in the same manner as they would for their all-cotton counterparts. However, one additional factor should be measured—pilling resistance. This test can be made by one of two methods—the Brush and Sponge test* or the Random Tumble test**.

The former is a method which has been in use for a number of years and is familiar to most finishers. This method, while subject to many variables, as are most laboratory tests, is still the best way to indicate resistance of fabrics to pilling around the collar of a dress shirt. It is also useful for comparing the relative pilling resistance of fabrics finished by various routings and techniques.

The Random Tumble Pilling tester, recently developed by Du Pont, employs an entirely different mechanism from the Brush and Sponge tester, and has been found quite useful for predicting pilling (other than collar pilling) during garment wear. All pilling, both in size and quantity, produced by this tester correlates quite well with the pilling actually found on the body of the same fabric in wear tests.

In conclusion, we have seen that the rapid growth of blends of Dacron with cotton has provided the opportunity for business in large yardages which can be dyed and finished with only slight modifications to the high speed, economical methods employed for similar all-cotton fabrics. By adapting these methods to the blend fabrics, we have insured a continually growing supply of high-quality fabrics for the consumer at salable unit prices. ■

* The principles of operation of the Brush and Sponge tester are described in Du Pont Technical Bulletin X-46.

** The Random Tumble Pilling tester is described in "Textile Research Journal", Vol. 26, No. 9, Sept. 1956.

Heard from Sandoz on dyeing Polyester fibers?

For polyester fibers alone, or for blends with viscose or cotton, Sandoz Artisil Ultradispersed® dyes are an effective answer. Particles are so fine and so well dispersed that good leveling and penetration are assured. Artisil Ultradispersed dyes are strongly recommended for fabrics which will be heat treated. Where blends with cotton/viscose are to be over-dyed with vats, they are perfectly resistant to the reagents in the vat dye bath.

In the use of these exceptional Sandoz dyes, the active cooperation of Sandoz technicians is at your service. Bring your next dyestuff question to SANDOZ, INC., 61-63 Van Dam Street, New York 13, N. Y. ALgonquin 5-1700.

SANDOZ

THINKS AHEAD WITH TEXTILES

SANDOZ

Synthane has a way with textiles... gentle but firm

The fine yarns in today's fabrics require the gentlest of handling. Therefore you find smooth, non-snagging Synthane laminated plastics in bobbins and pirns, in redraw caps, in furnisher rolls, in balloon separator blades, in hosiery turning and examining forms . . . and in many other textile machine parts.

Synthane is light-weight and strong. Synthane is smooth and wear-resistant. It shrugs off abuse; it resists impact, abrasion, crushing, steaming and effects of most commercial sizes and solvents. You may buy Synthane in sheet, rod and tube form or we can machine or fabricate complete parts to your specifications. Write us today for descriptive literature on Synthane laminated plastics. The unusual combination of properties of Synthane will show you why it is such an important product for textile mills and textile machinery manufacturers.

SYNTHANE ... industry's unseen essential

SYNTHANE CORPORATION OAKS, PENNSYLVANIA

SYNTHANE CORPORATION
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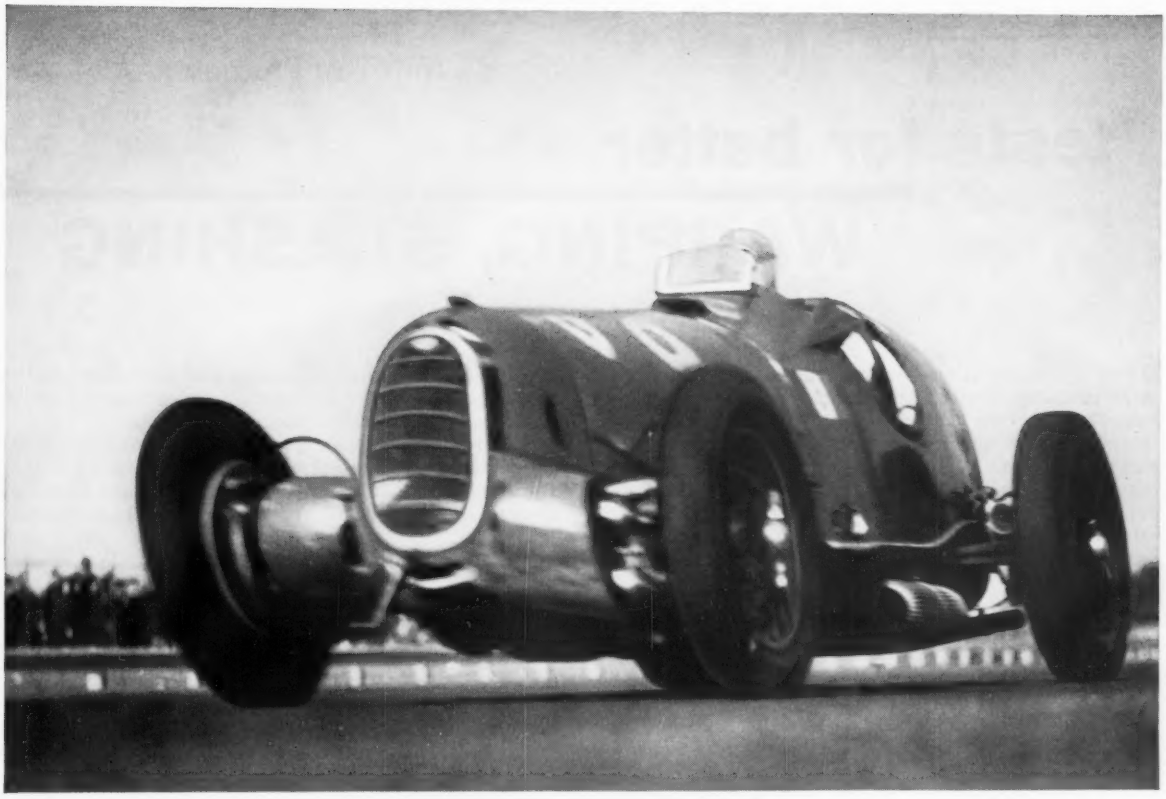
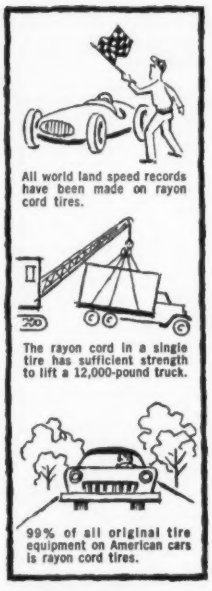


More Miles per Dollar... More Safety per Dollar... — *thanks to Rayon Tire Cord!*


All world land speed records have been made on rayon cord tires.
The rayon cord in a single tire has sufficient strength to lift a 12,000-pound truck.
99% of all original tire equipment on American cars is rayon cord tires.

Rayon, superseding cotton as tire cord, is largely responsible for the increasing endurance of our automobile and truck tires. Tire manufacturers now foresee tires which will last the normal life of a car.

Racing drivers, whose lives depend on the durability of their equipment, rely on rayon tires. Racing speeds generate great heat, and rayon grows stronger as it becomes hotter. To all drivers this is an important safety factor in summer.

During the last five years rayon manufacturers have added 45% to the tensile strength and 60% to the flex-life of rayon. This has substantially increased the durability, fatigue resistance, and safety of tires made with rayon cords.

Rayon is less expensive than any other man-made fiber suitable for tire cord. Unlike some man-made fibers, rayon takes no set when standing, making "flats" on otherwise round tires.

It is not surprising that more than 99% of the country's cars roll from the factories on rayon cord tires. Rayon also contributes to safety, comfort or economy in fan belts, convertible tops, upholstery, carpeting, compartment and trunk linings, and spring covers.

Needless to say, both rayon and tire manufacturers have contributed to the development of safe and economical rayon cord tires. The Stauffer organization, too, has shared in this development by supplying Carbon Bisulfide, without which there is no rayon; and Sulfur, without which there is no practical rubber.

Stauffer is the country's first and largest producer of Carbon Bisulfide . . . the country's largest processor of Sulfurs.

STAUFFER CHEMICAL COMPANY

380 Madison Avenue, New York 17, N. Y.

Offices in Principal Cities Throughout the Country

Stauffer CHEMICALS SINCE 1885

Mill Test Procedures #9

tests for better WARPING, SLASHING

By Norbert L. Enrick*

SINCE low stops in weaving depend to a large extent upon properly warped and slashed yarns, it becomes important for the cost and quality conscious mill to maintain effective tests and controls in the warping and slashing operations. The relatively small expenditure for such tests can usually be justified many hundred times by the reduced loom stops and the consequent benefits in higher production, lowered labor costs and reduced off-quality cloth achieved.

Tests in Warping

The quality control tests in warping have been combined in one test procedure, the "Warper Check" furnished at the end of this instalment. Usually, this check can be performed during the regular test for warper stops due to end-breaks. This end-breaks check is primarily performed for the purpose of incentive pay calculations and adjustments. However, this test can also be made to serve in the quality control program by designing the testing form in such a manner as to show the causes of breaks and therefore the off-standard quality factors which may be responsible.

A typical form, suitable for this purpose, is shown in Figure 25 Warper Breaks. It permits the recording of breaks by cause, and the convenient tabulation of these breaks by total number and percentage in each category. In addition, provision is made on the form for noting the results of the Warper Check test as regards condition of the warper and quality of workmanship, using the portions for indicating the percentage of high and low tensions and the section for tail condition, creel-condition and cone handling. Additional information is entered under "Notes."

Although proper processing of yarns on the warper is most critical for filament and synthetic spun yarns, the finer cotton yarns need similar care to maintain their weavability and avoid damage due to chafing, soiling or improper tensions.

Tests in Slashing

Slashing is even more important than warping for good weaving performance, since improperly slashed yarns may cause a high rate of warp stops on the loom. Accordingly, the following quality control tests may need to be performed weekly on each slasher:

— Size Content
— Size Analysis
— Stretch

Detailed test procedures, including purpose, sampling, method and evaluation of results, are furnished in the back of this instalment. As in warping, it is desirable to analyze slasher end-breaks, using a recording form which shows these breaks both by cause and by section beam, as illustrated in Figure 26: Slasher Breaks. This form also permits entry of the percent stretch, size content and size analysis data from the quality control tests listed above.

Still further valuable information may be obtained by comparing these periodic test results against the routine production records maintained in the slashing department, such as the typical Dressing Room Report in Figure 27.

Size Content and Size Pickup

It should be noted that the data obtained from the Size Content test refer to the amount of size present in the slashed and *sized* yarn, expressed as a percent of the unslashed and *unsized* yarn. In some mills, the use of *size pickup* is preferred, which denotes the amount of size present in the slashed and sized yarn, expressed as a percent of this slashed and sized yarn. Where it is desired to convert figures of "size content"

Fig. 25

Werner Tex. Cons.
New York 17, N.Y.

WARPER BREAKS

Mill	Yarn	Supply Pkg.	Mach. #	Set # Yds:	MR %	Date
Style	Selv. Yarn	Tension	Yds./Min.	Tender	Job #	Tested by:

No. Ends	Reasons for Breaks: Cone Alignment	Rough Cone	Bruised Cone	Break at Transfer	Broken Filament	No Tail	Run-out	Slip Knot	Cut Posts or Guides	Waste	Unknown	TOTAL	%
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
Tot.													
%													

YARDAGE
a. At start of test:
b. At end of test:
c. Total yards run:

ENDS
d. In Selvage:
e. In Beam:
f. No. of Beams:
g. Total Ends in Beams = e x f :

BREAKS/10 MILLION YARDS
Total Breaks x 10 Million / c x e x f
= _____
= _____ Brks/10 Mill. Yds.
Test Period: ___ Hrs. __ Mins.

QUALITY
Tensions
% High:
% Low:
Creel Condition: *
Tail Condition: *
Cone Handling: *
Note at *, whether "o.k.", fair, or poor.

NOTES:

* Institute of Textile Technology, formerly with Werner Textile Consultants.

distinction in every setting . . .

Saylerized®

Wash and Wear Finish for Dacron* and Cotton Blends

Yes, *Saylerized* lends distinction to Dacron and cotton blends. For Saylerized treated fabrics hold their original shape and drape after washing. But that's not the whole story by any means. Read the following advantages. Learn *all* the facts about *Saylerized*.

1. No fuzziness or pilling.
2. Garments that hold their original shape and drape.
3. Controlled shrinkage.
4. Excellent crease resistance.
5. Easily washable.
6. A rich, smooth and lasting finish.
7. A full, drapy hand.

For Sales Appeal on Dacron and Cotton Blends

use ***Saylerized***

*Du Pont's trade-mark for its polyester fiber

SAYLES

SAYLES FINISHING PLANTS, INC. ***Established 1847***

Sayles Bleacheries Division; Glenlyon Print Works Division; Sayles Biltmore Bleacheries, Inc.

NEW YORK OFFICE – 70 WEST 40th STREET

SLASHER BREAKS

Mill	Yarn Description	Warp No.	Set No. & Yds.	Tender	Job No.	19
Style	Selvage Yarn	Yds./Min.	Size Formula	Test Period Hrs.	Mach. No.	Tested by:

Beam No.	REASONS FOR BREAKS: Selvage Break	Draw-back	Lost End	Rough Beam Head	Broken Filam.	Break in Reed	Break in Front	Unknown	Total	Back Clock	Slashed Yards	Stops without Breaks	No. of Flats
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
TOT													
%													

BREAKS

a. Ends in Selvage
b. Ends in Beam
c. No. of Beams .....

Breaks/10,000,000 Yds.

PERCENTS

Pounds Waste .....
Waste .....%
Stretch .....%
Size .....%
Gelatin Content .....%

TEMPERATURES, °F

Storage Tank .....
Size Box .....
Can or Cylinder: No. 1 ..... No. 2 ..... No. 3 ..... No. 4 ..... No. 5 ..... No. 6 ..... No. 7 .....

NOTES:

Fig. 26

to "size pickup", the following conversion formula may be used:

$$\% \text{ Pickup} = \frac{\% \text{ Content} \times 100}{100 - \% \text{ Content}}$$

For example, if a slashed yarn has a 14% size content, then its size pickup is found from this formula to be 14% times 100, divided by 100% less 14%. This yields 14 × 100/86 or a size pickup of 16.3%. These conversions are similar to those for Moisture Content % and Moisture Regain % previously presented.

Refinement of Size Content Tests

The size content test furnished here is designed for practical use in routine mill control. It is not, however, the most refined and accurate test method as might be used for research purposes. In particular, when testing cotton yarns, the routine mill test does not take account of a certain proportion of natural oils and waxes that are removed during the desizing treatment, and which really should be kept separate. The effect of the desizing treatment can be determined by subjecting unsized yarns to the desizing bath, and determining the bone dry weight of this sample before and after treatment. The difference, expressed as a percent of the treated bone dry weight, represents the percentage of oils and waxes.

Once a mill has determined this percentage for a particular cotton from about ten samples taken in a two-week period, the value found for percentage of oils and waxes may be used as a correction factor in adjusting the percentage size values obtained under routine mill tests. This corrected value is of importance when comparing data between different mills and in making cost calculations for size consumption. However, for routine control purposes within a mill, where emphasis is on relative comparisons within the mill from day to day or week to week, it is usually not necessary to make this correction.

Additional Tests

In order to judge the effect of slashing on the weavability of yarns, it is sometimes advocated to test the single-end and skein strength of the sized yarns. Experience, however, has shown that such tests are hardly adequate. Often, a new size formulation or other processing adjustment in slashing may not yield stronger yarns and yet produce yarns which weave better. This may be due to other characteristics imparted to the yarns, such as improved bending stiffness, elasticity or resistance to impact and abrasion. Instead of testing the yarns for these complex characteristics, it is simpler and preferable to make a more direct test: to actually observe the weaving performance of these yarns by warp stoppage tests on the looms. For example, to compare the beams of "old method" slashed yarns against beams of "new method" slashed yarns, several sets of each type of beams might be run side by side on the looms. If the new method has resulted in an improvement, it will show itself in the form of reduced loom stops.

Thus, while special tests and investigations are needed to find optimum methods of warping and slashing, once these have been established, the routine test procedures in warping and slashing are designed as a continuous control over the maintenance of these optimums.

WARPER CHECK

Purpose

Periodic inspections at the warper serve as a check on the maintenance of standard warping procedures, leading to highest quality operation and workmanship. This is especially important for many filament and spun synthetic yarns, where improper or non-uniform tensions, poor cone handling, or otherwise imperfect warping conditions will lead to inferior cloth quality.

Equipment Required

Small pocket knife.

SPEED: 12,500 rpm PROBLEMS: none

Quill winding spuns with KIDDE compensators

For 2 years, these winders have operated at 12,500 rpm with the help of new Kidde double disc compensators, specifically designed for use on spuns and natural fiber yarns. At top efficiency, they've turned out the kind of quills that give top loom performance. There are 5 reasons why these Kidde Compensators give such outstanding performance.

1. You get maximum density control with Kidde Compensators, cutting down on quill changes and assuring uniform quill size as well.
2. There is never any build-up of lint because Kidde Compensators are entirely self-cleaning.
3. Tension is automatically maintained at designed strength of yarn.
4. Kidde Compensators assure absolutely uniform quill diameters.
5. Positive tension control is maintained without any abrasion.

Can you afford to do without these "constant watchmen" over your winding process?

For full information, write to:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

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SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Procedure

This test is usually performed during spare time while performing warper end break stop checks.

1. Check all tensions. Note the number and percentage of high and low tensions, if any. Note any undue accumulation of fibers or waste under tension disks.
2. Check creel condition, tail condition and cone handling.
3. With blade of small pocket knife, gently check all porcelains. Note any cut, chipped, sticky or loose porcelains.
4. Check for crossed ends between panel guides.
5. Check for excessive waste on packages or frequent broken filaments in the yarn.

Evaluation

Note and report off-standard conditions found, so that corrective action can be taken where required.

SLASHER SIZE CONTENT DETERMINATION

Purpose

To obtain a uniform coating of size, so as to aid weaving efficiency and keep size costs at a minimum.

Procedure A:

(For slashers with storage tank)

DRESSING ROOM REPORT_____**BRANCH**

TWO WEEKS ENDING_____**19**___

STYLE 1	ENDS 2	COUNTS 3	BEAMS 4	CUTS 5	Weight Sections 6	WASTE 7	Weight Centres 8	Weight Size Added 9	% Size Added 10	SIZING 11	POUNDS	PRICE	VALUE
										Potato Starch			
										Corn Starch			
										Total			
										12 WASTE		%	Pounds
										Soft Slasher No. 1			
										" " No. 2			
										Hard Slasher No. 1			
										" " No. 2			
										Twisted			
										Sweeps			
										Swabs			
										Total			
										13. SLASHERS	Hours Operated Day	Night	
										Machine No. 1			
										" " 2			
										" " 3			
										" " 4			
										" " 5			
										" " 6			
										Total			

	DAY	NIGHT
14. DEPARTMENT HOURS OPERATED		
15. POSSIBLE SLASHER HOURS OF DEPARTMENT, FULL OPERATION (100 HOUR FORTNIGHT)		
16. ACTUAL SLASHER HOURS OPERATED		
17. PERCENTAGE OF POSSIBLE HOURS OPERATED		

SUPERINTENDENT

OVERSEER

Fig. 27

1. By observing the difference in tank level at start and finish of the beam, find the *gallons used per loom beam.* This value, multiplied by the pounds of size used in each gallon of size solution, yields the *pounds of size per beam.*
2. Find the *size content* from the following poundages per beam, as used in the formula

$$\text{Percent Size} = \frac{\text{Pounds Size} \times 100}{\text{Pounds Size} + \text{Pounds of Yarn}}$$

Procedure B: (For other slashers)

(Continued on Page 108)

COMPARE THESE TYPICAL VERSAMATIC PERFORMANCE FIGURES WITH YOUR CURRENT DRAWING FRAME PRODUCTION...

Performance which clearly indicates SACO-LOWELL'S *NEW* VERSAMATIC* DRAWING FRAMES belong in your mill

Mill	A	A	B	C	C	D	D
Stock	Carded	Carded	Combed	Combed	Combed	Combed	Combed
Process	1st Process	2nd Process	1st Process	1st Process	2nd Process	1st Process	2nd Process
Model Versa-matic	4 Over 5	4 Over 5	3 Over 4	3 Over 4	3 Over 4	3 Over 4	3 Over 4
Sliver Fed	52.5 gr.	54 gr.	55 gr.	120 gr.	60 gr.	62 gr.	55 gr.
Ends Up	8	8	8	4	6	6	6
Speed	264 ft./min.	264 ft./min.	260 ft./min.	216 ft./min.	216 ft./min.	250 ft./min.	250 ft./min.
Sliver Delivered	54 gr.	56 gr.	55 gr.	60 gr.	60 gr.	55 gr.	55 gr.
Tester	Saco-Lowell	Saco-Lowell	Saco-Lowell	Brush	Brush		
Variation	18%—19%	18%—19%	10%—13%	14%—16%	11%—13%		
Efficiency	92%—95%	92%—95%				82%	82%
Deliveries	16	16	60	32	32	12	12
Deliveries/Operator	32	32	30	32	32	24	24
Can Size—Back	15" x 42"	15" x 42"	15" x 36"		14" x 36"		15" x 36"
Can Size—Front	15" x 42"	15" x 42"	15" x 36"	14" x 36"	14" x 36"	15" x 36"	15" x 36"
Yards/Can	3800 yds.	3875 yds.	3300 yds.	2850 yds.	2850 yds.	3500 yds.	3500 yds.
Pounds/Can	29.3 lbs.	31.0 lbs.	25.9 lbs.	24.4 lbs.	24.4 lbs.	27.5 lbs.	27.5 lbs.
Draft	7.77	7.71	8.03	8.03	6.00	6.75	6.00
Pounds/Man Hour	1250 lbs.	1270 lbs.	1105 lbs.	1070 lbs.	1070 lbs.	772 lbs.	772 lbs.

6 STANDOUT VERSAMATIC FEATURES

- Front roll delivery of 250 to 300 feet per minute under average mill conditions.
- Sliver regularity is equal to or better than that obtained from conventional frames operated at low speeds. C.V. generally about 2.75% to 4.00%.
- Has patented automatic self-cleaning top and bottom clearers with built-in static conductors.
- Regular mill runs show an efficiency up to 93%.
- Anti-friction bearings throughout the frame.
- Proven Shaw principle drafting elements can be 3 over 4 or 4 over 5.

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VERSAtile . . . adaptable to all fibres, both synthetic and natural, from ¾" to 3".

autoMATIC . . . in all ways except for creeling and doffing.

Versamatic gives highest production of quality sliver by every standard — per delivery — per man hour — per square foot of floor space — per horsepower. For further information and demonstration call your nearest Saco-Lowell Office.

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Harry Dalton

(Continued from page 34)

which made a success using rayon on a top beam to put stripes in cotton dress goods.

On one of those pioneering trips during which he opened new territories for rayon, he sold yarn for the first time to Dan River and several other big mills—an exhilerating achievement. Sales feats of this kind were not unnoticed in the head office of the company in New York where Samuel Salvage, no mean salesman himself, came more and more to appreciate the genius for selling of his Charlotte representative. One day in 1936, he surprised Harry by calling him up to New York and presenting him with the overwhelming news that Harry had been elected to the Board of Directors.

In selecting Harry Dalton as a director of the corporation, Salvage was in fact only giving credit where credit was due. He was also wisely securing the counsel at the highest levels of his company of a man who had proven himself in 10 years of work not only a great salesman, but one of the textile industry's most influential figures.

He Made Many Friends

In his years in the South, Harry won himself firm friends everywhere. He won friendship not only through his great personal charm, his cheerful, relaxing presence, his capacity to tell amusing stories endlessly. He won friends through his inexhaustible willingness to help people, his strenuous activities in Charlotte and elsewhere in the South on behalf of educational, religious and charitable causes.

In 1941, Harry was asked to take the job of heading the synthetics division of the War Production Board. The job was a tough one; in the vast military production picture, a thousand powerful voices were clamoring for giant shares of the country's production of rayon and nylon. These fibers were needed for military tires; they were needed for parachutes; they were needed for hundreds of other uses all essential to the war effort. There was not nearly enough to go around. Harry and his assistants saw to it that the available yarn and fiber was distributed in accordance with carefully worked out priorities and in ways that would do the most good for the cause of victory. At the same time, they worked equally hard to see that the man-made fibers industry got the chemicals and other raw materials, the steel and concrete and finished machinery, it needed to expand its output to meet the demands of war.

Harry stayed on this difficult job until the war was over. But during his four years in Washington, he made sure that he kept in touch with the textile industry. In the opinion of many who saw how good a job he did in those days, his care in keeping open his channels of communication with the textile industry was one of the major reasons why he was able to do so well. All during those four years in Washington, Harry went back to Charlotte every Friday and stayed until Monday. He used these weekends to visit with his friends in the mills, to learn how they were doing, and keep informed of their needs and their points of view.

As soon as he could get away from Washington in 1945 Harry headed straight back to his home and office in Charlotte. In 1948, he was made vice president in charge of sales, moving his headquarters to the company's Philadelphia office. In 1955, the company promoted him to be vice chairman of the board of directors, a position from which he supervises the entire textile and tire yarn operation of American Viscose.

His new responsibilities have not impaired his great good nature, his affable relaxed manner or his enormous talent for getting along with people and making friends. He remains a plain-spoken, easy-going fellow, as relaxed and unaffected as an old shoe. It is part of his great charm, and an expression of his basic integrity that he has one manner for everybody whether he is the president of a big mill or the man who shines his shoes.

One of his associates who worked closely with him in his Washington days tells a story that charmingly illustrates this trait. Harry was invited to come out to the luxurious Virginia country estate of a high ranking government figure, a cabinet member in fact. Due to some misunderstanding, he arrived several hours before his host. When the host came and was informed that Harry was already there, he set out to find him. A search of the gardens and grounds, of the swimming pool and tennis courts yielded no sign of the missing Dalton. Finally, he was discovered sitting restfully on the back porch helping the cook shell peas.

Removed during these past few years from selling, Harry Dalton has impressed his associates by a well-developed array of talents as an executive. He brings to his executive duties the same easy manner that marked him as a salesman of extraordinary ability. But the easy manner is accompanied by an impressive ability to keep his fingers on the many complex functions of a huge corporation. His associates marvel at Harry's retentive memory, his ability to keep in touch with protracted problems until satisfactory solutions are found.

He has, his associates say, the ability to make firm decisions, but to make them in a pleasant way. He knows how to smooth over difficult situations with a joke and a friendly word. As an executive, he preserves his earlier wonderful knack as a salesman of leaving people more cheerful than he found them.

A Man of Many Interests

Harry's zest for life extends beyond the world of business. He somehow manages to find time for a great many other activities, most of them in the interest of his fellow men. He gives his time to such causes as the Pennsylvania Hospital, the Crozer Theological Seminary, and the Philadelphia Textile Institute. For many years, he has been a member of "The Good Fellows of Charlotte", a group that does much fine charitable work. Somewhat surprisingly for so busy a business man, he has the scholarly habit of collecting first editions, and rare letters and manuscripts related to American history.

According to the Bureau of Vital Statistics, Harry Dalton reached his 62nd year last June. But those who know him think there must be a mistake somewhere. He has the energy and high spirits of a fellow in his twenties. The burdens of heavy corporation responsibilities rest lightly on him, in no way diminishing his "zest for life". With greater skill than ever, he sinks those long putts on the 18th green for which he is famous in textile golfing circles. He still has a hundred funny stories to tell, and he still has time, apart from business, to work for the welfare of others. ■

How Much Per Traveler-Pound?

The true test of a traveler is the number of pounds of top quality yarn which can be spun or twisted with it before it wears out. The more yarn produced, the lower your cost per traveler-pound.

Millmen who keep a sharp eye on production costs always judge travelers on this traveler-pound rating. And that's why so many choose Victor Travelers for spinning or twisting.

Victors consistently cost less per traveler-pound for two reasons. First, because there are no better travelers made, by any test of quality and uniformity. Second, because Victor Service Engineers, all mill-trained men, can quickly grasp your special problems, and come up with the right answer.

They can not only recommend the *right* traveler, but can often make other suggestions for improving your quality and production, — whether you are running conventional fibers, synthetics, or blends.

Plan now to talk to a Victor man about your costs per traveler-pound. Write, wire, or phone the nearest Victor office . . . for prompt service.

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"ACRYLITE" was especially developed by Leatex to provide an improved dyeing agent for Orlon . . . the increasingly important **buy**—word for women's sweaters. It has definite advantages which contribute to dyeing quality and economy, among them, the following:

LEVEL DYEING—the result of a finer dispersion, evenly absorbed. Eliminates streaking and shading under normal conditions . . . avoids the necessity for re-dyeing.

IMPROVED COLOR—"Acrylite" imparts a degree of lustre . . . **"life"** . . . to the colors, especially the pastel shades.

ADDED SOFTNESS—assures a softer "hand" for the fabric . . . speeds up the softening process.

"ACRYLITE" may be used for either the one- or two-bath procedure . . . **it scours and dyes in one operation.**

LeaTex

LEATEX CHEMICAL COMPANY
2724 N. HANCOCK ST., PHILADELPHIA, PA.

Mill Tests

(Continued from Page 104)

1. Collect thirty exact one-yard lengths of *unsized yarn* from the unsized set being started.
2. Collect an identical yardage of *sized yarn* while the set is running.
3. Keep both specimens together for four hours, while they assume the moisture of the atmosphere. Then weigh each.
4. Multiply the weight of the slashed yarn by the sum of 100% plus the % stretch in slashing (obtained from past records), to yield *adjusted sized weight.*
5. Calculate the *size content* from the formula:

$$\text{Percent Size} = 100\% - \frac{\text{Unsized Weight} \times 100}{\text{Adjusted Sized Weight}}$$

Procedure C:

(For high accuracy)

The size content is determined more directly (but tediously) from bone-dried specimens, using a desizing solution, such as 7 grams of Rhozyme DX in one litre of water, maintained at 160°F. for one hour. This procedure is not required for routine quality control purposes.

Evaluation

In order to prevent "sticky" or inadequately coated yarns, corrective action is required whenever two successive tests reveal size content more than 1.5% off-standard.

SLASHER SIZE ANALYSIS

Purpose

This test permits a quick check on the use of proper size constituents, mixing and cooking time by the operator.

Equipment Required

Stainless steel or aluminum pint bottles, attached to a steel chain. Thermometer. Hydrometer.

Sampling

Lower three pint bottles into the storage kettle, filling each with size liquid. Lower one bottle ¼ way down, the next ½ way down and the third ¾ way down, so as to obtain a representation of all layers in the kettle.

Procedure

1. Permit size removed to cool to between 120 and 140°F.
2. Insert the hydrometer and read the percent gelatin content from the hydrometer scale.
3. Average the three readings.

Evaluation

Where actual readings deviate from the allowable tolerance, a check of the actual weighing, mixing and cooking procedures should be made for faulty procedures, faulty scales or improperly or inadequately labeled containers.

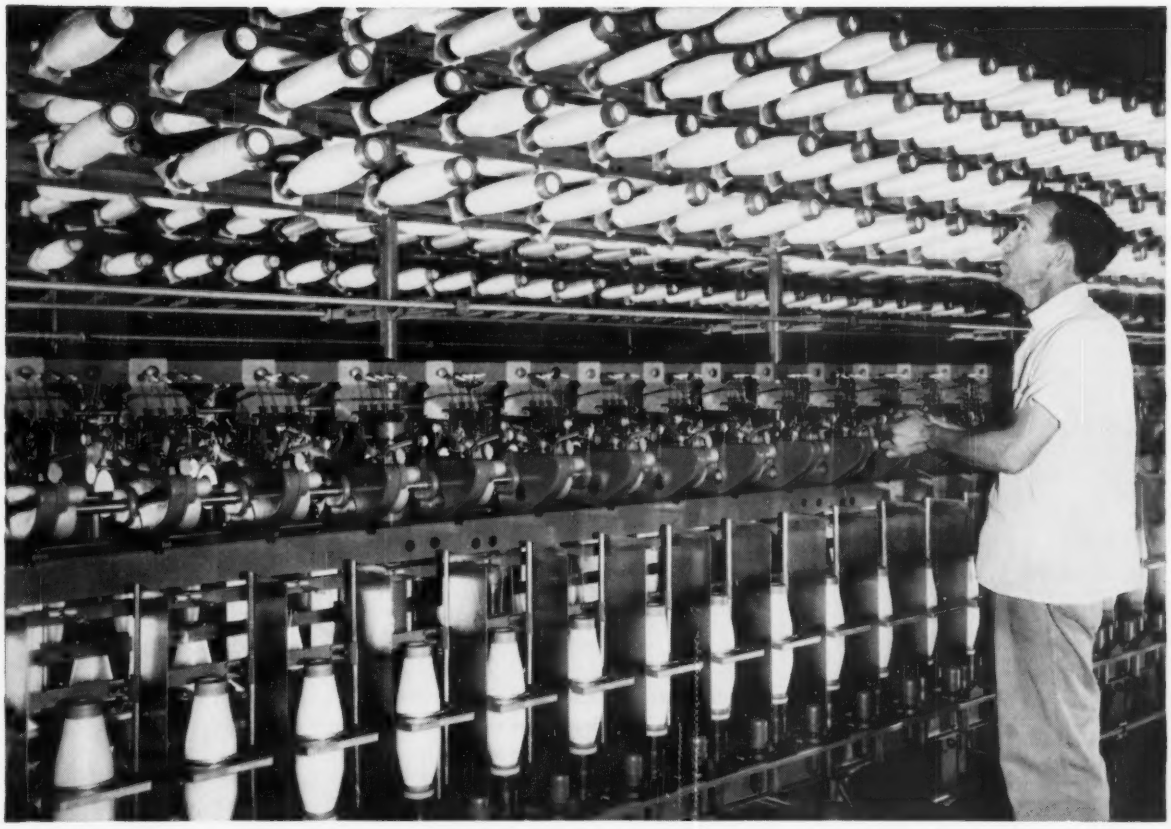
SLASHER STRETCH CHECK

Purpose

Moderate amounts of stretch in slashing are often desirable because of a resultant increase in yarn strength. Also, costs are saved by this elongation, due to the increase in total yardage of yarn.

There is, however, an allowable limit of stretch for

(Continued on Page 113)



Leesona Model 10 Ring Twisters processing glass yarn at the Seguin, Texas, plant of the Coast Manufacturing and Supply Company. The firm produces Trevarno Glass Fabrics.

Producers of TREVARNO GLASS FABRICS chose Leesona Model 10 Ring Twisters

Years of research and planning went into the decision of Coast Manufacturing and Supply Company to enter the textile industry as processors and weavers of glass cloth. The 85-year-old Livermore, California, firm, with a long history in the manufacturing and distribution of safety fuse for the mining and construction industries, made the carefully-planned move into textiles in 1947.

Ralph E. Merritt, president of the firm, reports:

"After evaluating other types of twisting equipment, Coast Manufacturing and Supply Company decided upon the Leesona Model 10 Ring Twister."

Model 10's are used exclusively in Coast Manufacturing's 800-spindle twister installation in Seguin, Texas, producing a double-tapered package which can be used directly for filling and warping operations without rewinding.

Versatile Leesona Model 10's can also produce a tapered top or straight wind package. They are ideal for processing not only glass yarn, but rayon, spun rayon, nylon, silk, wool, worsted, cotton and combination yarns, and the new bulk and stretch yarns as well.

Make Your Own Evaluation

See how flexible Leesona Model 10 Ring Twisters can improve your own twisting operations. See your Universal representative or write direct.

23.6.11

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Winding and Twisting Machinery for Natural and Synthetic Yarns

Single Shift Pros, Cons

With a number of firms considering cutting their operations from multiple shifts to a single shift because of poor economic conditions in the dyeing industry, the Silk and Rayon Printers and Dyers Ass'n of America, Inc., New York City, has listed the possible advantages and disadvantages of a single versus a multi-shift operation.

Advantages of a single shift operation include: (1) Less personnel required, particularly production employes and supervision. In a union shop such a reduction would bring tremendous savings. (2) Greater efficiency: There is a greater degree of flexibility, and overtime can be scheduled without adding more personnel. The working force also remains fairly stable with no real lay-off problems. (3) There is much less pressure to fill up a plant with goods regardless of price, as there is when more than one shift is running. (4) The decrease in production is not in direct proportion to the number of workers eliminated.

Single-shift disadvantages include: (1) The overhead is higher per machine hour. (2) Hours in excess of eight hours on a single shift operation are paid for at time and one-half.

Joseph F. Wildebush, executive vice president of the association, in summarizing the pros and cons of both methods of operation, reported this simple guide in making a decision: If the overhead is low, firms might best benefit from a single-shift operation; if the overhead is really high (top rent, high taxes, and high supervisory and executive salaries), firms may be forced into a multi-shift operation.

For the DYER and FINISHER

Mitin Mothproof Sources

A booklet including approximately 300 manufacturers of apparel and home furnishings, durably mothproofed with Mitin, has been issued by Geigy Dyestuffs, Division of Geigy Chemical Corp. The list also includes nearly 150 mills which apply Mitin for their customers, as well as about 50 commission dyers and a score of yarn suppliers to the knitting and weaving trade.

Mitin is the mill-applied durable mothproofing compound developed by Geigy. It is applied, like a dyestuff, during a wet finishing operation in the ratio of 2 to 2½ per cent of the fabric's wool weight. *For free copies of this booklet write the editors.*

New Surfactant

A comprehensive application manual on "Neutronyx 600 in the Textile Industry," detailing cost savings in many areas, has been issued by Onyx Oil and Chemical Co. Neutronyx 600, a new, completely synthetic, non-ionic surfactant, is said to be characterized by extreme versatility, stability and chemical compatibility. *Free copies are available by writing the editors.*

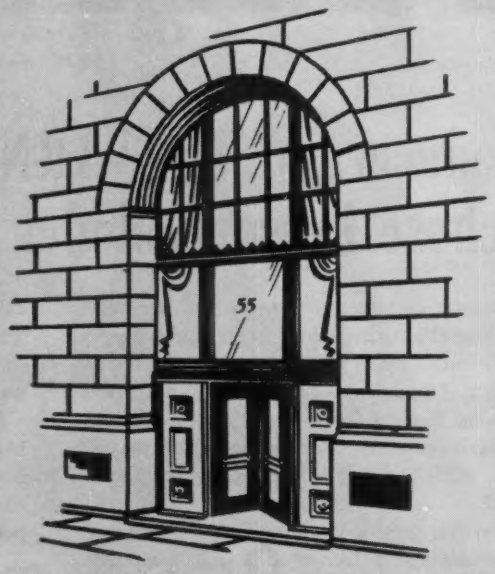
Sandoz New Direct Dye

Lumicrease/Cuprofix Gray 3 LBN p.a.f. has been brought out by Sandoz Chemical Works, Inc. to its line of direct dyes. The new product is bluish grey in shade and is reported to have the maximum fastness required for automotive and decorative fabrics. Good wet fastness can be further improved, Sandoz said, by after-treatment with Cuprofix, Sandofix and/or standard U.F. resin finishing. *For further information write the editors.*

(Continued on Page 114)

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

Information available for any manufacturer or distributor with $500,000 or more annual sales.



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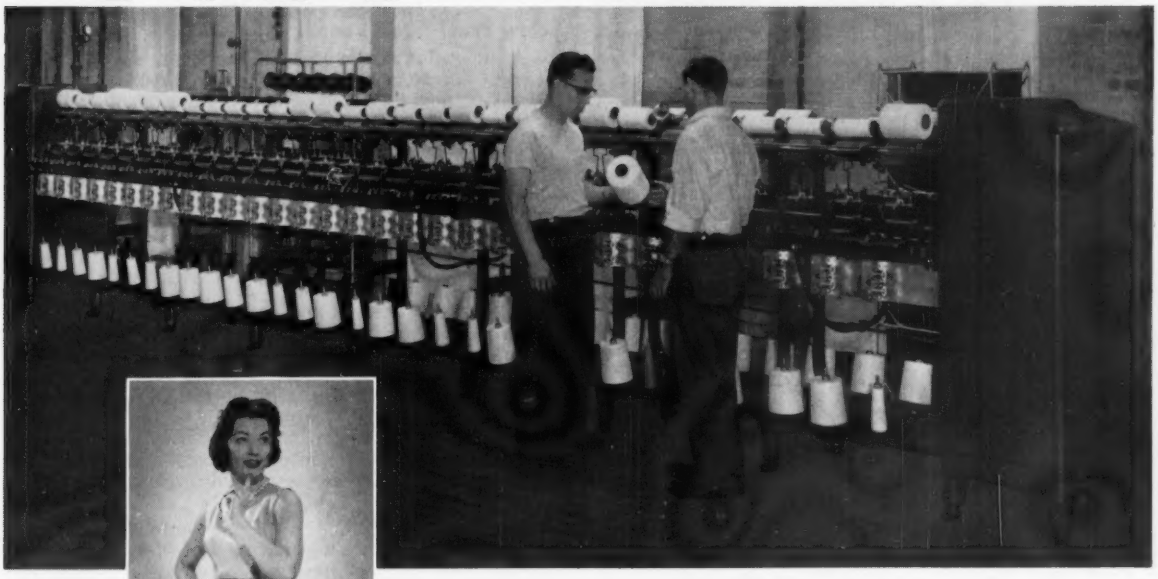
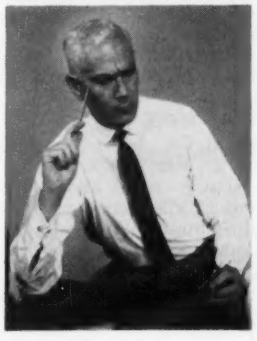


DRESSES
SKIRTS
BLOUSES
LOUNGE WEAR
LINGERIE
UNIFORMS
SNO-SUITS
GIRDLES
SWIM WEAR
PIECE GOODS
UPHOLSTERY FABRIC
DRAPERY FABRIC
RUGS
MEN'S DRESS & SPORT SHIRTS
JACKETS



U. S. Acme Texturizer Opens New Market Possibilities In Texturing Standard Yarns

You know that "TASLAN"* textured yarns are bringing new luxury, new rich touch and new lightweight comfort to an almost unlimited number of finished products. Now, all filament yarns (either as single ends or in combination) can be textured to interesting new forms that create extra selling opportunities.

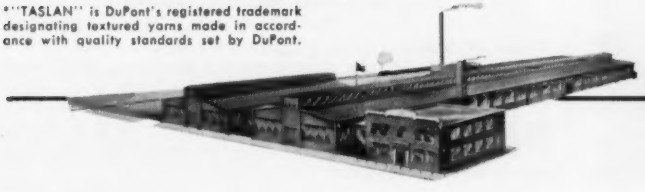
The first efficient production unit for texturing filament yarns is the 60-spindle U. S. ACME TEXTURIZER shown above. This new machine is designed for both the wet or dry process of texturing twisted or untwisted filament yarns from cakes, cones, pirns, spools, etc.

Mill operators tell us it gives them a whole new quality and profit approach to yarn texturing . . . with its new, bigger, uniform headless packages, its positive yarn feed control, its simplicity of threading and accurate tensioning.

Get your order in now . . . U. S. ACME TEXTURIZERS are being built in production for mill operators who have already seen the possibilities in this new field!

U.S. TEXTILE MACHINE COMPANY • Scranton 8, Penna.

*"TASLAN" is DuPont's registered trademark designating textured yarns made in accordance with quality standards set by DuPont.



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"KENYON OF KENYON, RHODE ISLAND"

NEW FABRICS

NEW YARNS

New Wool Pile Channel

A new flexible wool pile channel, designed expressly for marine use, is being marketed by Schlegel Manufacturing Co. The channel incorporates silicone treated wool pile said to give positive resistance against moisture and wetting. An extruded nylon strip, resting on a built-in cushion, is reported to provide an excellent bearing surface upon which the glass easily rides. At the same time, the wool pile is impervious to heat or cold. *For further information write the editors.*

Pillow Cases Gift-Boxed

Pillow case sets manufactured by Riegel Textile Corp. are now available in gift boxes designed by Container Corp. of America. Riegel uses the containers for three new lines of cases with handloomed and Schiffli embroidery. The bottoms of the containers are entirely overwrapped with Mylar, leaving the merchandise visible for counter display and customer inspection when the top of the box is removed. *For further information write the editors.*

Syl-Mer Finish Fabrics

Dow Corning's stain-resisting Syl-Mer finish, heretofore most widely used in the upholstery field, has been introduced in the volume curtain and drapery category by Riverdale Draper Fabrics. Riverdale's new "Highland Collection" are being identified with Syl-Mer tags for retail selling.

The collection has a total of 22 different colors: 6 plaid combinations, 6 stripe combinations, 6 colored warp solids and 4 self-color warp solids. The fabrics, reported suitable for draperies, slipcovers and bedroom ensembles, feature a textured basketweave. The Syl-Mer finish, Dow states, renders the fabrics stain-resistant to water-borne liquids, and adds a more desirable hand and prevents wrinkling.

New Wool-Nylon Fabric

A new wool-nylon fabric, with "built-in" durable moth-proofing, created especially for the home-sewing trade, has been introduced by Milliken Woolens Inc. The fabric is 87½% wool, 12½% nylon in a porous leno weave. Nylon was incorporated in the fabric to add wrinkle resistance and extra durability. The fabric is treated during the dyeing operation with Geigy's Mitin durable mothproofer, reported to remain effective during the normal life of the garment. *For further information, write the editors.*

New Softspun Yarn Colors

January and Wood Co., have announced addition of two new colors to the firm's line of "Kentucky Softspun" yarns—a rosy coral and a soft turquoise. The new colors will retail at approximately 29 cents a skein. Each skein contains 70 yards of yarn, which is guaranteed washable, color-fast, and shrink resistant. Makeup of the yarn is 75% rayon for luster and softness, and 25% cotton.

Weinberg Wins Award

Harold Weinberg, Inc., has been awarded the 1957 Gold Medal Award for outstanding fabric achievement by the California State Fair and Fabric Exposition. The winning fabric was a brushed wool and mohair loop plaid, available in a 58-inch width and in five color combinations. The fabric is priced at $2.92½ per yard. The company reports the fabric is being accepted in women's apparel, particularly skirts and sportswear.

Protection of Designs Sought

The cause of effective design protection in textiles and other fields where original designs have value has reached a point in recent years where there is some hope that "design piracy" can be checked, Syvan Gotshal points out in a recent booklet entitled "Today's Fight for Design Protection."

Mr. Gotshal, a member of the law firm of Weil, Gotshal & Manges, has long been a leader in the effort to stop copying of designs which have commercial value. He reviews the history of the struggle to obtain legal protection of designs, and notes that recently a number of court decisions and interest in Congress points toward eventual effective protection for the commercial designer against unscrupulous activities of copyists. He asks the textile industry and other interested industries to press strongly for enactment of copyright laws that will really end "design piracy". "To this end," he says, "some center, some organization would undoubtedly serve best. In the present state of affairs it might function as a kind of clearing house for copyright, expediting the matter for its industry members. Simultaneously it would give voice to industry's specific needs in design protection, and seek to mobilize opinion in its favor."

Copies of Mr. Gotshal's book, at one dollar each, may be obtained by writing the editors.

Sample Cut Charge Works

Converting firms which have adopted a charge for sample cuts as reported on this page in our July issue, have informed the TDI that cutters accept the charge without complaint. They also report that the charge is rapidly becoming a practice widely observed among textile distributors, and that since they have established it, there has been a decrease in four and five yard cuts and an increase in sales of 15 yards or more.

Blue Ridge Now TDI Member

Blue Ridge Textile Co., Inc., 112 West 34 St., New York 1, N. Y., has been elected to membership in the Textile Distributors Institute. The firm distributes plain spun, print, underwear, blouse, knit, men's wear, water repellent, silk and special fabrics. William M. Winkler, president, and Charles S. Fowler, manager woven fabrics department, will represent the company at Institute meetings.

William J. Gallon Mourned

At a recent meeting, the Board of Directors of the Textile Distributors Institute unanimously adopted a resolution expressing the deepest sympathy to the family of the late William J. Gallon. Mr. Gallon was a retired vice president of J. P. Stevens & Co., Inc. A copy of the resolution was forwarded to Mr. Gallon's widow, Helen S. Gallon.

Outlook *(Continued from Page 32)*

Nylon Holds Strong Position—At the fiber level, nylon in 1957 seems to have strengthened its position through a general broadening of distribution in a variety of consumer and industrial markets. Although there will be further modifications in finishing techniques and in the fiber itself, it can be regarded from now on as a firmly established textile material.

Later results will probably show that texturizing of filament yarns, chiefly nylon, came of age during 1957. After considerable experience, more processors are now developing special yarns for special end-uses, and the use of textured filament yarn in both knit and woven fabrics should expand substantially during the next year or two.

Broader Acceptance Needed by Newer Fibers—The other non-cellulosic fibers have strengthened their position. As contrasted with nylon, however, much more remains to be accomplished in the development of fabrics which will become basic, and in establishing a minimum position in a greater variety of end uses.

Although 1957 cannot be counted as a boom year for textiles as a whole, it appears that the industry has some substantial achievements to be thankful for, and good prospects to look forward to in 1958.

Mill Tests *(Continued from Page 108)*

each yarn—usually established from mill experience and experiments—beyond which the yarn may be deformed, lose its elasticity and tend towards excessive breaks during weaving. Accordingly, careful controls over stretch are required.

Equipment Required

Yardage counters (3), sensitivity 1 foot.

Procedure

1. Attach yardage counters to the following:
   a. Section beam nearest to size box.
   b. Section beam farthest from size box.
   c. Slasher delivery roll.
2. Permit counters to run for several hours, then read off yardage on each.

Calculations

1. Find the average of the two section beam counters, by adding the two yardage figures and dividing by two. This is the section beam yardage.
2. Find the Percent Stretch from the formula:

$$\frac{\text{Delivery Roll Yards—Section Beam Yardage}}{\text{Section Beam Yardage}} \times 100$$

Evaluation

Any measured stretch which exceeds the standard by more than ¼% should be considered excessive, while a measured stretch falling ½% below standard should be considered inadequate.

On slashers equipped with automatic instruments indicating stretch continuously, this test serves as a calibration check of the instruments. ■

. . . . . **STANLEY**
automatic door controls

for new or existing doors that swing, slide or fold

Mill doors operated *automatically* by Stanley Magic Door Controls stay open only the minimum time required to let traffic through. This prevents drafts or loss of humidity that could cause end breakage and . . . accumulation of waste . . . work stoppage . . . poor quality . . . lower production.

Write for your copy of our new booklet, "Plant Ideas to Make Efficiency Grow," to Magic Door Sales, Stanley Hardware, Division of The Stanley Works, Dept. E, 1535 Lake Street, New Britain, Conn.

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY

STANLEY

This famous trademark distinguishes over 20,000 quality products of The Stanley Works—hand and electric tools • drapery, industrial and builders hardware • door controls • aluminum windows • metal parts • coatings • steel and steel strapping—made in 24 Stanley plants in the United States, Canada, England and Germany

Dyeing Notes

(Continued from Page 110)

Low-Cost Softener

Development of Dexene CS-15, a low-cost substantive softener for use with all fibers either as a self-softener or in resin finishes, has been announced by Dexter Chemical Corp. Dexene CS-15, a cationic-nonionic agent, may be used either on the alkaline or acid side and is reported to be compatible with a wide variety of thermo-setting and thermo-plastic resin formulations. Because of its even rate of exhaustion, the product is reported to insure uniform softness throughout the package or beam in pressure machines. *For further information write the editors.*

Processing Agents

Three processing agents developed by Arnold, Hoffman & Co., Inc. include a nylon warp size, an anionic lubricant emulsion and a cationic softener. Ahcovel X57, a textile softener, is reported to perform effectively on nearly every textile fiber, and to be of considerable merit in both pure and resin finishes. Ahco nylon warp size is a balanced blend of binders and waxes, compounded to provide a non-corrosive lubricant and size for nylon and Dacron yarns intended for marquisette constructions. Syntharol ND, an anionic emulsion of liquid wax, facilitates knitting and weaving operations by imparting lubrication and softness to natural and synthetic yarns, according to the company. *For further information write the editors.*

General Dyestuff Data

General Dyestuff Co. has released a new circular, G-797, containing pertinent data on Algol Brilliant Blue 4G Infra Paste, and Algol Brilliant Blue 4GWP Powder. Both products are described as new, straight, greenish-blue, vat dyestuffs characterized by exceptional brightness of shade and outstanding light fastness on both cotton and rayon. Except for poor fastness to chlorine and fair fastness to oxidizing gases like ozone and oxides of nitrogen, the circular reports the products display a generally good level of fastness and working properties. *For further information write the editors.*

New Glyco Products

Two new products, Acrawax C Powdered and a polymer "gum," are now being produced commercially by Glyco Products Co. Inc. Better color dispersion and intensity of color is reported obtained by blending Acrawax with the pigments commonly used. Acrawax is a white powder with a high melting point of 284 to 290 de-

grees F., and a flash point of 810 degrees F.

The gum product is not subject to bacterial or enzymatic decomposition but prevents other components from decomposing, losing strength and developing bad odors, the company reported. Water-white and practically odorless, the gum has a melting range of 50 to 90 degrees C, and will dissolve in cold water. *For further information write the editors.*

Color Fastness Improved

A new product, Culofix W F D, developed by the Arkansas Co., Inc. is now being released to mills for use as an after-treatment to improve fastness of direct dyes to laundering. Culofix has been found of value when used in conjunction with Hydro-Pruf, the company's silicone water repellent and thermo-setting resins, Arkansas said. Its use is said to have no adverse effect on the water repellency rating produced by Hydro-Pruf on all types of fabrics. *For further information write the editors.*

Better Rug Backings

Pliolite Latex 151 is the newest of the copolymer dispersions offered by the Chemical Division of The Goodyear Tire & Rubber Co. The new product is said to be characterised by high solids and excellent reinforcing properties. When blended with nitrile, styrene, neoprene or natural rubber latex, "151" bolsters hardness, stiffness and modulus without interfering with tensile strength. The company reports the new latex has proven successful in upgrading quality in carpet backings, foam and fabric coatings. *For further information, write the editors.*

Surface Active Agent

Proctor Chemical Co., is marketing Protowet XL, a surface active agent of the sulfated fatty acid ester type. The manufacturer reports that this product should be of particular value in many phases of textile wetting processes. The dyeing of heavy tightly woven fabrics is improved by pre-treating the goods with Protowet XL, the company states. *For further information write the editors.*

United Expands Sales

United Piece Dye Works Service Corp. has announced it will handle all sales for two New Jersey firms, Haledon Textile Processors, Inc., and Cambridge Textile Processors, Inc. No change in ownership or management of Haledon and Cambridge is involved. Haledon is equipped to handle roller printing on a wide range of fabrics. Cambridge specializes in flock, duco and stencil printing on all types of textiles.

yarns dyed by GLOBE . . .

Sweaters knit from butter-soft, lofty Orlon yarns, dyed by Globe, have the cashmere-like quality that delights the heart of style-and-comfort-conscious men and women without exception. This is not surprising for Globe technicians had a leading role in the development of present methods of Orlon dyeing, and Globe dyers have been dyeing it continuously ever since, in production quantities.

FOR DYEING ORLON YARN YOU CAN RELY ON GLOBE

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.

Yarns we process include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan —Dacron — Orlon.

Globe DYE WORKS CO.
1865 1957

4500 Worth Street Philadelphia 24, Pa.

JEfferson 5-3301

R. B. Armstrong C. C. Bassett, Jr. Dr. F. Prakke

New Enka Vice Presidents

The election of two new vice presidents of American Enka Corp. and other executive changes were announced last month by John E. Bassill, president. The corporation, which manufactures rayon and nylon, has created a new division of marketing headed by Dr. John L. Bitter, who has been named vice president, marketing. He was formerly vice president for research and development. C. Chester Bassett, Jr., who has been general sales manager, has been elected vice president, sales.

Dr. Frits Prakke, who has been technical assistant to the president, has been elected vice president, manufacturing, to succeed Martin Wadewitz, who becomes technical vice president and head of a newly combined research and engineering division.

Robert B. Armstrong, who has been assistant to the president, has been named assistant vice president, manufacturing, and will transfer from the New York office to Enka, N. C. Carl R. Dolmetsch has been appointed assistant to the president and will continue as manager of business development.

Rugged, Compact, Versatile

Today's Most Modern

COMBINATION BEAM and PACKAGE

Dyeing Machines

Both our single and multiple kier arrangements permit the dyeing of from one to six beams or package carriers at the same time, in the same dye bath, with complete eveness and uniformity of shade. Capacities range from 250 to 2000 lbs. Years of research have resulted in a variety of manual and automatic pressure flow controls to assure successful beam dyeing. All machines can be arranged for High Pressure, High Temperature dyeing. Write for illustrated folder.

GASTON COUNTY DYEING MACHINE CO.

Pioneers In Automatically Controlled Dyeing Machinery

STANLEY, NORTH CAROLINA

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Terminal Bldg., 68 Hudson St.
Hoboken, N. J., G. Lindner, Mgr.

A. R. Breen
80 E. Jackson Blvd.
Chicago, Ill.

The Rudel Machinery Co., Ltd.
614 St. James St. W. Montreal
260 Fleet St. E., Toronto

Textile News Briefs

Lestershire Bobbin Data

Copies of a 12-page catalog, "Lestershire Bobbins," which covers the company's complete line of bobbins for use in the textile, electrical manufacturing and metalworking industries, are available from the Lestershire Spool Div. of National Vulcanized Fibre Co. The booklet describes and illustrates standard and special bobbins and lists their applications. *For copies write the editors.*

Draper Parts Catalog

A new Repair Parts Catalog for X and X-2 Model looms manufactured by Draper Corp., Hopedale, Mass., is being distributed to mills operating these models. Illustrations covering latest loom constructions, together with complete listings of improved repair parts, are said to permit quick and easy identification and ordering of proper replacement parts.

Ideal Equipment Ordered

Springs Cotton Mills has ordered 108 Ideal Feathertouch drafting changeovers for their White plant and 12 for their Fort Mill plant, is was announced. The Hartsville Cotton mill is taking 48 changeovers and the Florence Division of Cone Mills Corp. at Forest City is adding 96 drafting changeovers. The equipment is manufactured by Ideal Industries, Inc., Bessemer City, N. C.

Waste Processing Machinery

Bulletin No. 432, describing the Proctor Waste Puller for manufacture of wiping-waste, car-box waste, automobile filters and similar products, is now available from Proctor & Schwartz, Inc. Also available is bulletin No. 424, which describes the firm's sifting screen, type No. 577, for reclaiming usable fiber from dust and waste sytems.

Non-Lubricated Bearings

Electro-Nite Carbon Co., has available a new 16-page catalog describing non-lubricated bearings made from carbon graphite material. The bearings are said to operate under very high temperatures, are chemically inert and overcome many maintenance problems for various industries. Detailed specifications and applications are listed in the catalog. *For further information write the editors.*

Metallic Yarn Survey

More than 95% of the consumption of metallic yarns by domestic weavers, knitters and manufacturers was in the two standard colors, gold and silver, according to a survey made by Metlon Corp. The balance, a little less than 5%, represented all other colors, and even this small percentage was made up largely of the Christmas red, blue and green. Another poll among department store buyers disclosed similar results.

Women Like Orlon Sweaters

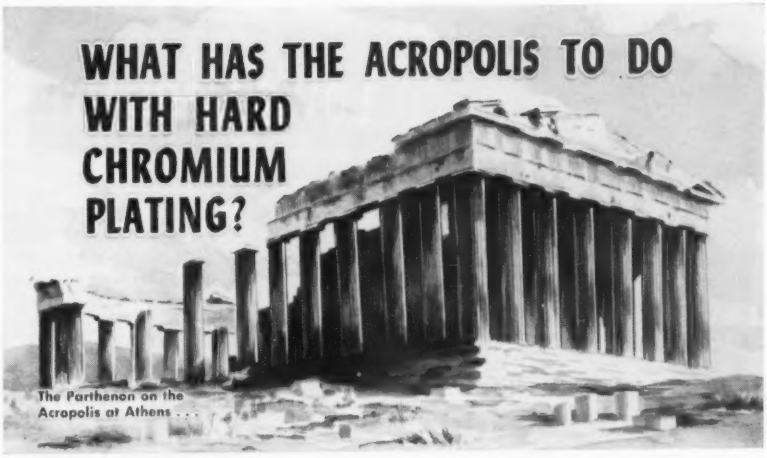
"Easy care" and "wearing pleasure" are the qualities that make sweaters of Orlon acrylic fiber highly preferred by women, according to a survey made by National Family Opinion, Inc., for the Du Pont Co. Of 2,200 women queried in the survey, 55% owned at least one Orlon sweater and nearly two-thirds of this percentage said they had two or more such sweaters. Other reasons for the women's preference were: good looks, soft texture and shape-retention with no blocking required after washing.

New Carpet Rayon Colors

Hartford Rayon Co. has announced the addition of two new colors to its solution-dyed carpet rayon staple line and extension of its 8 denier program to two other colors previously manufactured only in 15 denier. The new colors, Coco, in 8 denier bright and 15 denier dull fiber, and Sable, in 15 denier bright, bring the number of Hartford's line of solution-dyed carpet rayon colors in production to 15. In addition, Cafe Brown and Midnight Black also are available in 8 denier bright for the first time.

Vulcanized Fibers Catalog

A new 16-page catalog has been published by the Continental-Diamond Fibre Corp., describing the company's complete line of materials handling containers constructed of Diamond vulcanized fiber. Information in the catalog, "CDF Materials Handling Containers," includes applications, sizes, and colors. Many of these containers are used in the textile industry. *For free copies, write the editors.*



In ancient Greece each city was constructed at the base of a large hill which served as a natural stronghold against hostile neighbors. Such a city was Athens which, over 2400 years ago surrounded itself with a high wall and strengthened its citadel, known today as the famed Acropolis. Many sections of the original barricades still remain, reminding present day Athenians that their city could not have survived without the magnificent efforts of their wise ancestors, who believed that a valued possession deserved their best protection.

When it comes to longer-lasting protection for your textile parts, WALHARD Hard Chromium Plating is your answer. Outstanding workmanship and 20 years' experience exclusively on Hard Chromium back the WALHARD signature, guaranteeing you substantial savings in maintenance and down-time costs. Don't be satisfied with less than the best — Be sure you are getting quality — it costs no more and lasts longer.

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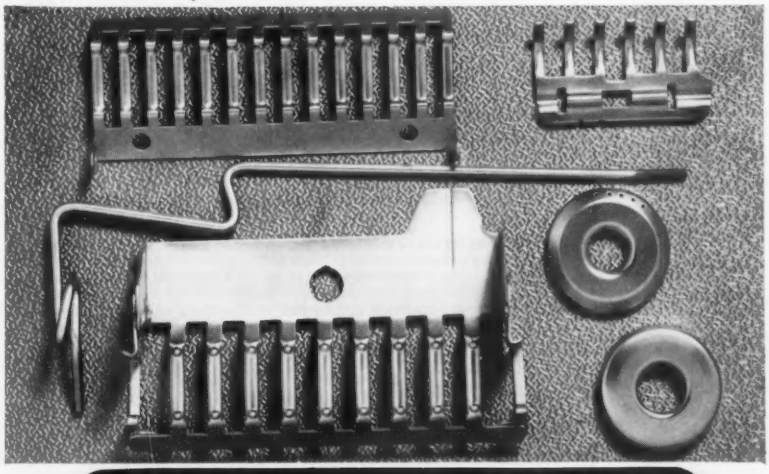
Specify WALHARD on your next Hard Chromium Plating order for POLISHED or SATIN FINISHED textile parts.

The leading name in textile hard chromium plating



WALTON and LONSBURY

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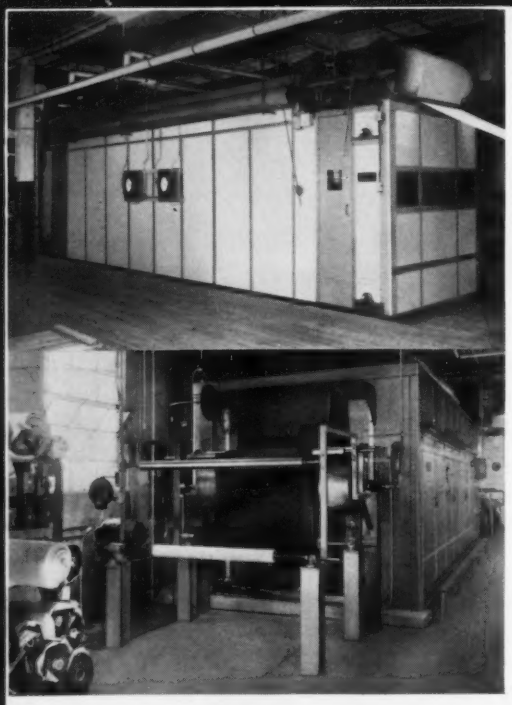
uniform textile curing at **LOWER COSTS!**



PROCTOR LOOP CURER

PROCTOR ROLLER CURER

Recent improvements in design and construction make these high-capacity Proctor loop and roller curers unsurpassed for uniformity of product and lowered processing costs.

Greatest Curing Uniformity . . . the result of perfectly controlled temperatures and Proctor's Balanced Air Circulation . . . there's no shading or migration of finish or color.

Maximum Capacity—Minimum Power . . . are features directly traceable to the careful design of the air circulation system . . . new turbine type fans directly connected to the motors boost output, lower power consumption and eliminate belt and coupling maintenance.

Flexibility of Operation . . . the standard design comes in a range of widths and lengths to suit both large and small plants . . . handles a complete line of fabrics . . . always under perfect control . . . no stretch . . . readily adaptable to in-range operation.

Simplified Installation . . . follows from Proctor's expert mechanical design . . . reduced installation time means less downtime and lower costs for you.

Improved Design . . . is the product of Proctor's long experience in supplying machinery to the textile industry . . . Proctor *knows*, and *supplies* what textile men *need* . . . in rugged, dependable, long-lasting and economical equipment.

Write today for the latest bulletins describing Proctor equipment for the textile field.

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR TUBULAR KNITS • EQUIPMENT FOR PRODUCING "REDMANIZED" ® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor

PROCTOR & SCHWARTZ, INC.

PHILADELPHIA 20, PA.

Sales Offices in Spartanburg, S. C., Glenview, Ill. (suburb of Chicago), Providence, R. I.

Manufacturers of Textile Machinery & Industrial Drying Equipment

Frazier's New Management

The business of the late Sherman W. Frazier, manufactures of textile testing and research instruments, is being continued under the new management of R. E. Ward and Wm. Grote, owners of Frazier Precision Instrument Co., 8913 Glenville Rd., Silver Spring, Md. The new management, it was announced, will provide all the instruments and services formerly furnished by the late Mr. Frazier.

Heads New Gessner Office

Richard L. Barnard, appointed southern representative of David Gessner Co., manufacturer of clothing finishing machinery at Worcester, Mass., heads the new Gessner office recently opened at 222 Piedmont Bldg., Greensboro, N.C. Paul F. Riedl, Gessner service representative and erector, also has his headquarters there.

New Hosiery Color Card

The Color Association of the United States has released its 1957 Fall and Winter Hosiery Color Card to the trade. Three darker colors, three in the medium scale and one light shade are featured in this collection, previously issued to the association's members in the advance confidential edition.

New Consulting Service

An expanded and coordinated consulting service in fibers, textile processing, plastics and allied industries is now offered by Skeist & Schwarz Laboratories, Inc., 89 Lincoln Park, Newark 2, N.J. The new firm is a consolidation of the laboratories conducted by Dr. E. W. K. Schwarz and Dr. Irving Skeist. Dr. Schwarz, president of the new firm, specializes in fiber development, dyeing and textile processing technology. Dr. Skeist, vice president, is a polymerization and plastics specialist.

Hemmerich Expands Staff

Hemmerich Corp. has appointed the William T. Cheatham and Co., P.O.Box 880, 507 Security Bank Bldg., Burlington, N.C., to its sales staff. The Cheatham firm will cover part of North Carolina, South Corolina and Virginia. Hemmerich, located in Murphy, N.C., has mills in Denver, Pa., and Buffalo, N.Y.

Sargent Names Agent

C. G. Sargent's Sons Corp., manufacturers of textile machinery and industrial dryers, has appointed John Law & Co., 5850 West Lake St., Chicago, Ill., as their sales engineering representatives in the Chicago, South Bend and Milwaukee area. The appointment covers the entire Sargent line.

Europe

(Continued from Page 40)

European Tire Cord Outlook—Dr. John Meynen, executive vice president of AKU said recently that there is more rayon than nylon used in European tire cord. He attributed this to an improved rayon yarn for private cars and the increased use of steel wire in heavy vehicle tires. Technically, he said, because of the advances in rayon, both in strength and durability, there now is little to choose from in rayon or nylon tire cord in Europe.

New Austrian Weaving Process—A firm in Austrian Altach Vorarlberg has come up with a new process to make nylon underwear with a special stipple effect. Three color combinations are possible. Hitherto, these effects could only be made by complicated printing and weaving techniques. It has been patented. . . At last month's Dornbirn Fair, a Czech export company presented a wide range of glass fiber products including thermal and acoustical insulation fabrics, mats, cords, ribbons and tubing.

New Yugoslavian Rayon Plant—The new viscose plant at Losnica, Yugoslavia, has begun initial production and should work into full output by early 1959. At that time, capacity will be 3,000 metric tons of filament, 16,000 tons of staple, 720 tons of high tenacity filament for tire cord, and 540 tons of cellophane. The equipment mostly came from Japan.

PERSONNEL CHANGES

Leslie Wizemann has been appointed manager of the detergent sales of the National Aniline Division of Allied Chemical & Dye Corp. **Paul J. Sullivan** has been named resident manager of the Philadelphia sales branch.

Bertrand Jagger has been assigned to the staff of the industrial division of American Viscose Corp.'s technical and textile service department. **Leon F. Bishop** has joined the company as northwestern sales representative of the film division.

Ronald R. Boyd has been elevated to the post of executive vice president of the Amerotron Corp. in New York. **Charles Earle** was named a vice president of the woolen fabrics department in the Barnwell, S. C. mill, in addition to his position as sales manager of the department. **Raymond J. Austin** has been promoted to the post of treasurer. **Joseph Sandlin** was named controller.

C. W. Bendigo has resigned as technical director of the fibers division, American Cyanamid Co.

Eldon Stowell has joined Brant Yarns, Inc. In addition to becoming technical director, Mr. Stowell will assist in sales and developments of new products.

Edward J. Bullard was elected chairman of the board of directors of the Bullard Clark Co. Mr. Bullard is succeeded as president and treasurer by **Jack D. Lodge. J. Edgar Moe** has been promoted to the post of executive vice president and secretary. In addition to continuing as sales manager for the company's textile divisions, Vice President **William R. Muller** was named division manager of E. H. Jacobs Northern Division.

Alfonse Amelio has joined the wholesale credit department of Commercial Factors Corp.

Gaston Gage has been named acting dean of the Clemson College School of Textiles. He succeeds **Dr. Hugh Brown**, who resigned.

(Continued on Page 123)

NON-FLUID OIL
TRADE MARK REGISTERED

THE SUPERIOR TWISTER LUBRICANT

Impartial tests made by leading yarn and thread mills prove invariably that white NON-FLUID OIL reduces traveler friction and stops overstrain on yarn. Furthermore, it reduces the number of broken ends and eliminates blackened yarn.

By providing clean, dependable lubrication, white NON-FLUID OIL assures more even operation of frames, with increased output of cleaner, better quality yarn at lower production cost. Saves too on lubricant and application cost.

White NON-FLUID OIL is preferred for ring lubrication by most leading yarn and thread mills. Write today for a free testing sample and Bulletin T-13.

NEW YORK & NEW JERSEY LUBRICANT COMPANY
292 MADISON AVE., NEW YORK 17, N. Y.
WORKS: NEWARK, N. J.
So. Dist. Mgr. : Lewis W. Thomason, Jr. Charlotte, N. C.

1896 61 1957 YEARS OF LUBRICATION SERVICE NON-FLUID OIL TO INDUSTRY

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Columbus, Ga.	Springfield, Mass.	Providence, R. I.
Charlotte, N. C.		St. Louis, Mo.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in August, 1957. All prices are given as subject to change without notice.

RAYON FILAMENT YARN

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Turn Skeins	Turned* Skeins & Cones	8½ Turns	High Turn Skeins & Cones 12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.24	1.50	....	....	....	1.80
65/45	1.14	1.30	....	$1.53	....	1.58
75/60**	1.04	1.18	....	1.41	$1.46	1.49
100/74**	.95	1.08	....	1.33	1.38	1.44
125/60	.94	1.05	$1.09	1.30	....	....
150/120	.93	1.02	1.12	1.27	....	....
300/225	....	.95	....	....	1.08	....

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.

** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Turn Tubes	No Turn Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.00	1.00	....	....	....	....	....
65/45	1.05	....	....	....	....	$1.42	....
75/45*	.97	....	$1.08	$1.08	$1.31	1.31	$1.39
100/60*	.89	....	1.03	1.03	1.23	1.23	1.31
125/60	.84	....	.99	.99	....	....	....
150/90*	.77	....	.81	.81	1.15	1.15	1.24
150/120	.81	....	....	.93	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.45	$1.35
1519**	155/90	....	....	1.45	1.35
2008	200/120	....	....	1.06	.96
2027***	210/120	....	....	1.06	.96
3002	315/180	$1.10	$1.00	....	....
4011	410/224	1.10	1.00	....	....
6001	600/360	1.08	.98	....	....
8001	860/450	1.08	.98	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.

** Code 1515 can be run in warp or filling.

*** Code 2027—Softer than 2000.

CUPIONI Type B

Code	Den/Fil	No Turn Skeins	2½ Turn Cones	5 Turn Cones
9610	50/30	$1.39	....	$2.14
9650	70/45	1.29	$1.64	....
9660	100/60	....	1.48	....
1545	150/90	....	1.25	....
9720	200/120	....	1.20	....
9730	285/135	....	1.10	....
9792	450/225	....	1.10	....
9814	600/372	....	1.07	....
9837	940/372	....	.97	....

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black comes in all deniers."

Long Type A

Code	Den/Fil	2½ Turn Cones	5 Turn Cones
9690	150/135	$1.25	$1.30
9739	290/135	1.05	1.10
9781	460/372	1.05	1.10
9816	600/372	1.02	1.07
9827	900/372	.95	1.00
9877	1180/372	.95	1.00
9926	2500/744	.95	1.00

STRATA SLUB

Code	Den/Fil	Turned Cones	Price
9697	150/135	3½	1.30
9747	275/225	3½	1.20
9798	450/372	2½	1.10
9823	600/372	2½	1.05
9847	960/372	2½	.97
9885	1290/372	1½	.95
9934	2682/744	1½	.95
9964	4750/1488	1½	.95

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Turned Cones	Price
9769	300/224	3½	1.40
9807	600/405	2½	1.20
9840	900/450	2½	1.10

"Spun Dyed Cupracolor Black 35¢ per pound extra."

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

American Enka Corp.

Current Prices

Effective December 4, 1956

Standard Quality Yarns

Standard Quality Rayon Yarns

A. Natural

Den./Fil.	Luster	Turns	Weaving Cones	Beams	Skeins Long	Skeins Short	Cakes	Knitting Cones
50/18	E	5 S						1.56
50/20	B	2.5 S&Z					1.45	
75/10	B	3 S&Z					1.08	
75/18	E	4 S						1.22
75/30	B	2.5,4S&Z	1.17	1.17			1.08	1.17
75/30	B	8 S	1.22			1.37		1.22
75/45	P,E	2.5, 4,5S&Z	1.17	1.17	1.23	1.37	1.08	1.17
75/60	B,P	3,4 Z	1.22				1.10	1.22
100/14	B,P	3 S&Z				1.12	.96	
100/40	B,E	12 S						1.27
100/40	B,P,E	4,5 S&Z					.96	1.04
100/40	B	6 S	1.10					
100/40,60	B,P	2.5,4S&Z	1.04	1.04	1.08	1.12	.96	1.04
100/60	E	2.5 S	1.06	1.06			.98	
125/40	E	3 Z						.96
150/40	B,P,E	2.1,3S&Z	.91	.91	.94	.99	.86	.90
150/40	B,E	5 S&Z	.91		.94	.99	.86	
150/40	B,E	8 S&Z	.97		1.00	1.05		
150/40	B,P	10 S&Z	1.03	1.03				
150/90	B,E	2.1 S&Z	.92	.92			.87	
200/40	P	3 Z						.82
200/40	B,P	8 S				.95		
250/60	P,E	2.4 Z						.75
300/50	B,E	3 S	.73	.73				
300/60,120	B,P,E	2.1 S&Z	.73	.73		.76	.71	.73
300/60	B	3.5 S	.73	.73		.76	.71	
300/60	B	4.3 S	.76	.76			.74	
300/60	B	7 S	.83					
300/40,120 H.T.	B	2.5, 3,4S	.75	.75				
450/80	B	3 S	.70	.70		.72	.68	
600/80,120	B,E	3 S	.69	.69			.67	
900/120	B	3.4 S	.68				.66	
900/120 H.T.	B	3.6 S	.70				.68	

"Jetspun" Colored Yarns

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams*	Cakes	Colors
100/40	Regular	2.5S	1.39	1.39		All
150/40	Regular	2.1S	1.26	1.26		All
200/40	Regular	8.3S	1.27			All
450/80	Regular	3.0S	1.05			All
300/40	High	3.4S	1.10	1.10		All
600/80	High	3.4S	1.06			All
900/120	High	3.4S	1.05	1.05		All

Registered trade mark of American Enka solution dyed rayon yarn.

* Single color.

American Viscose Corp.

Effective December 14, 1956

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams Tubes	Cakes
50	20	Bright & Dull	$	$1.59	$1.56	$1.45
60	10	Bright	....	....	1.41	1.30
75	10-30	Bright	1.24	1.20	1.17	1.08
75	30	Dull	....	....	1.17	1.08
100	14-40	Bright	1.12	1.07	1.04	.96
100	60	Dull	....	....	1.06	.98
150	24-40-60	Bright & Semi-Dull	.99	.94	.91	.86
150	40	Dull	....	....	.91	.86
150	90	Dull	....	....	.92	.87
200	10-44	Bright	.90	.85	.82	.78
250	60	Semi-Dull & Dull	.82	.78	.75	.73
300	44	Bright & Dull	.79	.76	.73	.71
300	234	Dull	....	....	.75	.73
450	100	Bright	....	.72	.70	.68
600	100	Bright	....	.71	.69	.67
900	60-100-150	Bright	....	.70	.68	.66
1200	75	Bright	....	.67	.65	....
2700	150	Bright	....	.70	.68	....
		Extra Turns Per Inch				
75	30	Bright 6-Turns	$1.36	$1.32	$1.29	$ ....
100	40	Bright 6-Turns	1.24	1.19	1.16	1.08
150	40	Bright 6-Turns	1.09	1.04	1.01	.96
300	15	Bright 5-Turns	....	....	.78	....
300	44	Bright 6-Turns	....	.86	.83	.81
600	30	Bright 5-Turns	....	.76	.74	.72
		Rayflex Yarns				
100	40	Rayflex	$	$	$1.07	$ .99
150	60	Rayflex	....	....	.94	.89
200	75	Rayflex	....	....	.85	.81
300	120	Rayflex	....	....	.75	.73
450	120	Rayflex	....	....	.72	.70
600	234	Rayflex	....	....	.71	.69
900	350	Rayflex	....	.72	.70	.68
		Super Rayflex Yarns				
600	490	Super Rayflex	$	$	$ .78	$ ....
900	720	Super Rayflex	....	....	.77	....

Shown on the left is the office building and machine shop of Gaston County Dyeing Machine Co. of Stanley, N. C. On the right is the company's new assembly plant with space and machinery for the production of all types of heavy equipment.

New Gaston County Plant

Gaston County Dyeing Machine Co., Stanley, N. C., has recently completed a new assembly plant as part of a program to improve efficiency and offer better service to customers. The new plant has three bays each 40 feet wide and 275 feet long. All bays are completely covered by the latest type, heavy duty Tramrail hoisting systems. Working height of 20 feet under the hoist hooks permits production of all types of heavy equipment.

The company has specialized for 36 years in beam, package and raw stock dyeing, bleaching, extracting and drying machinery. Twenty years ago, it introduced the first automatically controlled dyeing machine on the American market. Along with conventional pressure extracting and drying equipment, Gaston County produces a new, patented, "Rapid-Dryer" which employs the closed system, static pressure principle. The machine has demonstrated a high degree of efficiency in drying packages and cheeses of dyed and bleached yarns. The machine is completely automatic, and is said to have short drying cycles. It is also economical to operate.

In recent years, a complete line of "Hy-Vacuum" pressure autoclaves has been offered by Gaston County. These are used in textile plants for steaming and heat-setting natural and synthetic fibers and yarns. Fully automatic in operation, the autoclaves have found wide acceptance in yarn mills as well as knitting and weaving mills.

The company's engineering department has also been expanded. According to a company spokesman, a staff of engineers of long experience is available for consultation with customers and prospective customers on problems of design, fabrication and operation of equipment manufactured by Gaston County.

Gaston County has a machine shop in addition to its assembly plant. The shop produces centrifugal pumps, special valves, beam heads and other machine parts necessary for Gaston County products. Because of its broad range of equipment, the shop also does machine work for other manufacturers in the area.

"13¾" and 21" diameter heads

MILTON BEAMS*
(for Nylon and rubber yarns)
GIVE YOU THE BIG
BONUS OF
SUPER STRENGTH

The super strength of Milton's forged head Tricot and Raschel Beams is no idle claim—it's been proven by yarn producers, big mills and small mills alike!

They're light in weight, yet rugged in design to give true dimensional stability without objectionable deflection or distortion. Milton's forged, heat-treated aluminum alloy heads and extra heavy barrels become a one-piece beam by the continuous weld process first introduced in the field by Milton. Trapped ends of yarn or misalignment of keyways are eliminated because there are no mechanical joints!

You name the yarn . . . monofilament, fine denier, low turn or high twist—synthetics or rubber, Milton gives you true-running, well balanced beams to handle unprecedented yardages and extreme pressures!

WRITE FOR FREE BULLETINS . . . No. 49-A on Light Metal Beams and No. 54-S on Steel Beams. The Milton line includes warp beams for broad, narrow fabric, velvet and carpet looms, as well as light metal raschel, tricot and section beams.

MILTON

Over a Quarter Century of Dependability in Yarn Beams

MILTON MACHINE WORKS, INC.

DESIGNERS • ENGINEERS • MANUFACTURERS

MILTON • PENNA.

Thick and Thin Yarns

150	40-90	Bright & Dull	$	$	$1.15	$ ....
200	75	Bright & Dull	....	....	1.05	....
300	120	Bright & Dull	....	....	.95	....
450	100	Bright & Dull	....	....	.92	....
490	120	Bright & Dull	....	....	.95	....
900	350	Dull	....	....	1.00	....
920	120	Bright & Dull	....	....	1.00	....

Colorspun Yarns

Currently producing regular and high tenacity at premiums at $.35 per pound.

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Wooden Section Beams	55.00 each
Wooden Section Beam Crates	30.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.
Terms: Net 30 days.

Celanese Corp. of America

Current Prices
Effective December 14, 1956

Den.	Fil.	Twist		Beams	Cones	Cakes	Non Shrunk Tubes
#49 and #14 Production							
75/30/3	Bright			....	$1.11	$1.03	....
100/40/2Z	"			$.96	....	....	....
100/40/3	"			.98	.96	.91	....
100/40/5	"			....	1.02	.97	....
100/60/3	"			....	.97	.92	....
125/40/2Z	"			.94	.92	....	....
150/40/3	"			.89	.85	.80	....
150/40/2Z	"			.87	....	....	....
150/40/5	"			....	.91	.86	....
150/40/8	"			....	.97	.92	....
150/40/0	"		NS	....	.71	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"		NS	....	.63	....	....
#20 Production							
150/40/3	Bright			.87	.83	.78	....
150/40/0	"		NS	....	.71	....	....
150/40/2Z	"			.87	....	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"		NS	....	.63	....	....
#20 Production							
100/40/3	Dull			....	.96	.91	....
100/68/2Z	"			1.00	....	....	....
100/60/0	"			....	.93	....	....
100/60/5	"			1.04	1.02	.97	....
150/40/3	"			.87	.83	.78	$.77
150/40/0	"		NS	....	.71	....	....
150/90/3	"			....	.90	.85	....
250/60/0	"		NS	....	.67	....	....
250/60/3	"			....	.75	....	.70
#52 Thick & Thin Rayon							
150/60/3	Bright			....	1.15	....	....
450/120/3	"			....	.89	....	....

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with orders December 7, 1956

Bright and Dull

Den.	Fil.	Turns/ Inch Up to		(A) Cones, Beams, Tubes	Skeins	Cakes
40	20	3	Textile "Cordura"*	$1.90	$1.90	$1.85
50	20	3		1.63	1.63	
50	20	3	Textile "Cordura"	1.65	1.65	1.60
50	35	3	Textile "Cordura"	1.70	1.70	1.65
75	10	3		1.17	1.20	1.08
75	15	3		1.17	1.20	1.08
75	30	3		1.17	1.20	1.08
100	15	3		1.04	1.07	.96
100	40	3		1.04	1.07	.96
100	60	3	Bright	1.04	1.07	.96
100	60	3	Dull	1.06	1.09	.98
125	50	3		.96	.98	.90
150	40	3		.91	.92	.86
150	60	3		.91		
150	60	3	Textile "Cordura"	.92	.93	.87
150	90	3	Dull	.92	.93	.87
150	100	3	Dull	.92	.93	.87
200	35	3		.82	.84	.78
200	20	3		.82		
300	50	3.5		.73	.76	.71
300	120	3	Textile "Cordura"	.74	.77	.72
450	72	3		.70	.72	.68
600	96	3		.69	.71	.67
600	240	3	Textile "Cordura"	.70	.72	.68
900	50	3		.68	.70	.66
900	144	3		.68	.70	.66
1165	480	3	Textile "Cordura"	.68	.68	.65
1800	100	3		.68		
2700	150	3		.68	.70	
5400	300	3		.75		

Thick and Thin

100	40	3	#7	1.38		1.38
150	90	3	#7	1.15	1.16	1.15
200	80	3	#7	1.05	1.06	1.05
450	100	3	#7	.89	.90	.89
1100	240	3	#50	1.32		1.32
2200	480	3	#50	1.14		1.14

(A) 2¢/lb. additional for cones less than 3# and tubes less than 2#.
Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.
* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective December 21, 1956

Denier	Filament	Turns per in.	Type	2.8 Lb Cones	4.4 Lb Cones	Beams	2.2 Lb Tubes	4.4 Lb Tubes
100	40	2.5 "S"	Bright	1.04		1.04		
150	40	2.5 "S"	Bright	.91		.91		
150	40	2.5 "S"	Luster #4	.91		.91		
150	40	2.5 "S"	Bright intermediate strength	.92				
200	20	2.5 "S"	Bright	.82				
200	40	2.5 "S"	Bright	.82				
300	44	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Luster #4	.73		.73		
300	80	2.5 "S"	Bright extra strong	.75		.75		
450	60	2.0 "S"	Bright		.70	.70		
600	90	1.5 "S"	Bright		.69	.69	.69	.69
900	50	2.0 "S"	Bright		.68	.68	.68	.68
900	150	1.5 "S"	Bright		.68	.68	.68	.68

Luster #4 is semi-dull.
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River. PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corp.

Current Prices

First Quality Yarns	Den/Fil	Twist	Cones: Knitting* Cones	Cones: No Twist Knitting Cones	Cones: Beams, Tubes** and Weaving Cones	Untreated Cakes
	75/30	3.5			$1.17	$1.08
	75/30	7			1.30	
	75/30	15			1.37	
Normal	75/30	20			1.40	
Strength Yarns	100/40/60 Brt.	3.5			1.04	.96
NARCO	100/40/60	12			1.22	
	125/52/60	3			.96	.90
	125/52	10			1.13	
	150/42/60/75	3	$.90		.91	.86
	150/42	0		$.71		
	300/75	3	.73		.73	
	300/75	0		.63		
	600/98	3	.69		.69	
	900/46	2.5	.68		.68	
	1800/92	2.5	.68		.68	
Semi-High Strength Yarns Hi-NARCO	300/75	3			.74	

* Oiled Cones $.01 Per Pound extra for Graded Yarns only.
** 1 lb. tubes $.02 Per Pound extra for Graded Yarns only.
Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.
Prices subject to change without notice.

RAYON HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective November 1, 1956

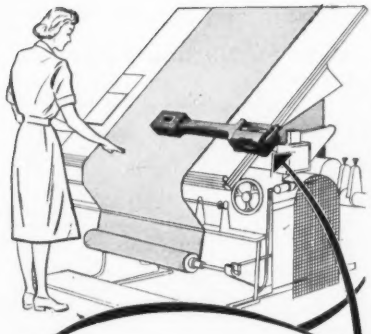
Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.59
1230/480	High	.59
1650/720	Low	.55
1820/720	High	.55
2200/960	High & Low	.55

Suprenka (Extra High Tenacity)

1650/720	Low	.58
1900/720	High	.58
2200/960	Low	.57

* Beams Only.
Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland Tennessee; minimum freight allowed to first destination east of the Mississippi River.



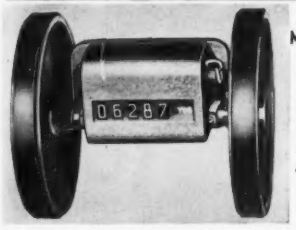
Something you owe your customers

Accurate textile measurement is what your customers expect. Give it to them! Show them indisputable evidence with a "TRUMETER" printed ticket or mill tag, delivered at any point during the run. This way you not only eliminate short-measure complaints and illegible handwritten records—you cut out waste *completely*. And that means EXTRA PROFITS!

"Trumeter" Standard Measuring Machine

"TRUMETER" can be fixed to most Inspection, Plaiting, Winding, Rolling and Doubling machines. Models are available for all types and widths of material—fine nylon, woolens, worsteds—even carpets, plastics, etc. It adds one way—subtracts the other and delivers its printed ticket with one depression of a lever. "TRUMETER" is always accurate — always reliable. There's one for *your* need. Write now for particulars of complete line.

"TRUMETER"



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TRUMETER COMPANY

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IN CANADA:
Dominion Electrohome Industries LTD.
Kitchener, Ont.

John J. Higgins has been appointed western division manager of C. H. Masland & Sons.

William Herbst has been made supervisor of starch applications research and **Irving Martin** has been made a senior chemist at National Starch Products.

Walter F. Prien and **Morey Kaplan** have been appointed to the faculty of the Philadelphia Textile Institute.

William Alfred Pearson has been appointed as superintendent of Riegel Textile Corp.'s Ware Shoals cotton mill. He replaces **W. M. Pittendreigh,** who has been made director of research. **William E. Ashley** was named to replace Mr. Pearson as superintendent of preparation. **Mark B. Eubanks** has been appointed director of purchasing and transportation.

Dr. Raymond L. Copson has been appointed to the post of assistant to the director of development, Solvay Process Division, Allied Chemical & Dye Corp. In the same division, **Verne W. Aubel, Jr.** has been appointed assistant director of sales. Named to succeed Mr. Aubel as manager of solvay's Philadelphia sales branch is **Kenneth M. Dillabough.**

George W. Ewald has been named manager of industrial synthetic fabrics sales of J. P. Stevens & Co., Inc.

M. Don Lyons has been appointed director of market research for Sun Chemical Corp.

George Graham has joined Stein, Hall & Co., Inc. as a sales representative at its St. Louis branch office.

Ernest E. Wolfertz has been appointed controller of Sandoz Chemical Works, Inc.

J. Howard Zeh has been appointed plant manager of the Perry, Ohio, carbon bisulfide plant of Stauffer Chemical Co.

Samuel T. Douglas, Jr. has joined the New England district sales office of Shawinigan Resins Corp.

James R. Wright has joined Uster Corp. in the capacity of product engineer in the testing equipment department.

Richard L. Barnard, southern representative of David Gessner Co., is in charge of their new office at Greensboro, N. C. He is assisted by **Paul F. Riedl,** Gessner service representative and erector.

DEATH

John B. Dickson, retired technical analyst for the textile division of the United States Rubber Co. died at the age of 67 after a brief illness.

Since 1922-

COMPLETE PACKAGE SERVICE

NYLON DACRON RAYON WORSTED

Hoffner has specialized for 35 years on filament yarns, thrown natural or dyed to your own specifications.

Ask us to help you take the uncertainty out of modern yarn preparation.

YARNS ON TUBES, CONES OR IN THE CAKE

Also spun synthetic yarns and worsted yarns.

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SALES REPRESENTATIVES

David F. Swain & Company, 105 W. Adams Street, Chicago 3, Ill.
Shannonhouse & Wetzell, Johnston Building, Charlotte 2, N. C.

American Viscose Corp.

Effective November 1, 1956
Revised June 10, 1957

Super Rayflex

Denier	Filament	Twist	Beams	Cones
1100	490	0	$.63	$.63
1100	490	4.1Z	.63	....
1650	980	0	.58	.58
1650	980	4.1Z	.58	....
2200	980	0	.57	.57

Tire Yarn

1100	490	2.7Z	.59	....
1650	980	0	.55	.55
1650	980	3.6Z-4.1Z	.55	....
2200	980	0	.54	.54

High Strength

1150	490	3.1Z	.59	.59
1230	490	3.1Z	.59	.59
1650	980	4Z	.55	.55
1875	980	4Z	.55	.55

Super Rayflex, Tire Yarn and High Strength yarns are sold "Not Guaranteed for Dyeing."

Tire Fabric

	Tire Yarn	Super Rayflex
1100/490/2	$.69	$.73
2200/980/2	.625	.655

Above prices based on 80% minimum Carcass, 15% maximum Top Ply, 5% maximum Breaker.

1650/980/2

* Production Factor

525	Open	Carcass	$.635	$.665
300	490	Top Ply	.645	.675
115	275**	Breaker	.67	.70

* Determined by dividing total ends by picks.

** Orders limited to 5% of total 1650 Fabric booked for any given period.

The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition—freight collect
Terms: Net 30 days.

Celanese Corporation of America

Effective December 27, 1955
Supersedes September 12, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb.
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "
60/2.5/80 Olive Green—Spun Dyed—OG106		4 lb. Cones	3.50 lb.

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U. S. A. east of the Mississippi River.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	$2.30			
300/280	0.8Z	$2.05			
300/280	3Z	$2.20			
400/400	0.8Z	$1.75			$1.70
400/400	0			$1.75	
800/800	0.8Z	$1.25	$1.25		$1.20
800/800	3Z	$1.40			
800/800	0			$1.25	
1600/1600	0.8Z	$1.15	$1.15		$1.10
1600/1600	2½Z	$1.30			
1600/1600	0			$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U. S. A. East of the Mississippi River. Shipments West of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with shipments April 17, 1957

"Super Cordura"*

(all packages)

1100	480	2	$.63
1250	480	2	.63
1650	720	2	.58
1900	720	2	.58
2200	960	2	.57
2450	960	2	.57

Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.
* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective November 1, 1956

Unbleached Bright High Tenacity Yarns

SINGLE END BEAMS AND CONES:

Den.	Fil.	Turns Per In.	4.4 Lb. Cones	Beams	2.2 Lb. Tubes	4.4 Lb. Tubes
1100	480	1.5 "Z"	.59	.59	.59	.59
1650	720	1.5 "Z"	.55		.55	.55
2200	1000	1.5 "Z"	.54	.54	.54	.54
3300	1440	1.5 "Z"	.54	.54	.54	.54
4400	2000	1.5 "Z"	.54	.54	.54	.54

"Above Prices apply to Type 100. Type 200 Tyron Prices are 3¢ more."
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.
Prices are subject to change without notice.

North American Rayon Corp.

High-Strength Yarns—SUPER-NARCO		Twist	Cones	Beams
1650	720	3Z		$.55
1850	720	3Z	$.55	
Super High Strength Yarns—				
1650	720	1.5Z	.58	.58

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b delivery point.

ACETATE FILAMENT YARN

American Viscose Corp.

Current Prices
Effective December 21, 1956

Bright and Dull

* Intermediate Twist

Denier & Filaments	Cones & 4-6 Lb. Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	$1.04	$1.02	$1.05	$.98	$.99
75/20	1.00	.98	1.01	.94	.95
100/28	.95	.93	.96	.89	.90
120/32	.86	.84	.87	.80	.81
150/41	.77	.76	.78	.72	.73
200/54	.73	.72	.74	.69	.70
300/80	.69	.68	.70	.65	.66

* Standard Twist 2¢ additional.
Terms: net 30 days.

Celanese Corp. of America

Current Prices
Effective December 20, 1956

Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6-Lb Cones	Beams	4 & 6-TM Tubes	4-Pound Cheeses	Spinning Twist Cones	Beams	O Twist Tubes
45/13	$1.17	$1.18	$	$	$	$1.12	$ ....
55/15	1.04	1.05	....	....	.98	.99	.925
75/20	1.00	1.01	.98	....	.94	.95	.84
75/50	1.02	1.03	1.00	....	....	....	.89
100/26-40	.95	.96	.93	....	.89	.90	.81
120/40	.86	.87	.85	....	.80	.81	....
150/40	.77	.78	.77	.77	.72	.73	.69
200/52	.73	.74	.73	....	.69	.70	....
300/80	.69	.70	.69	....	.65	.66	.63
450/120	.67	.68	.67	....	.63	.64	....
600/160	.65	.66	.65	....	....	....	....
900/80-240	.63	.64	.63	....	....	....	.61

150 Denier 12-TM Tubes	.76
55/0/15 Dull Tricot Beams	.985
2-Pound Cheeses	.01 Less Than 4-Pound Cheeses
2-BU and 4-Bu Tubes	Same Price as 4 and 6-Lb. Cones
2-Lb. Twist Tubes	.01 Less Than 4 & 6-Lb. Twist Tubes on 120, 200 and 300 Denier Intermediate Twist

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

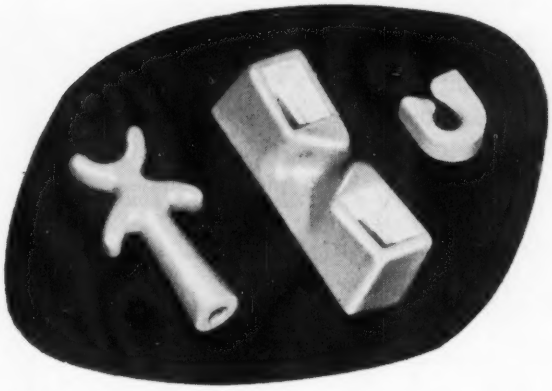
Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/80	.94		....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Effective March 11, 1955

Even though you're on the right track, you'll be run over if you just sit there!



We who make

LAMBERTVILLE THREAD GUIDES

are constantly on the track of new materials and methods to achieve even better service and longer life for our guides. That's why Lambertville guides are recognized as quality leaders everywhere. In white and 'Durablu' finish. Write for catalogue and sample.

LAMBERTVILLE CERAMIC
AND MANUFACTURING COMPANY
LAMBERTVILLE NEW JERSEY

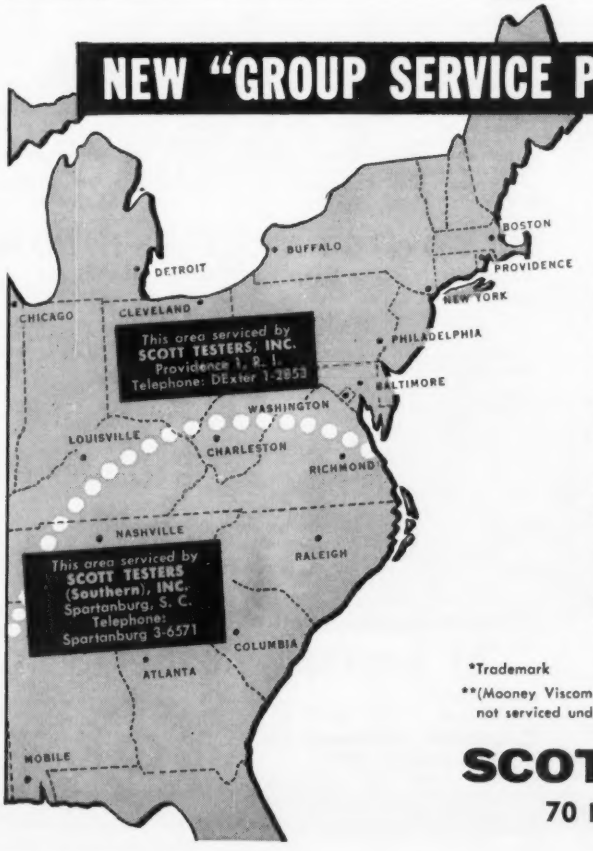
NO YARN TRAPPING WITH
BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN

New aluminum take-up bobbin with barrel and heads brazed together into a single unit prevents yarn trapping. Exceptional strength at price no higher than ordinary bobbins.

Write us today for full details.

BW MACK **ALLENTOWN BOBBIN WORKS, INC.**
ALLENTOWN PENNSYLVANIA

NEW "GROUP SERVICE PLAN" ***now available to Scott Tester* owners***



Provides maintenance servicing at fixed low rate

By pre-arrangement under the Group Plan, a Scott service man will call to inspect, clean, calibrate and adjust your Scott Tester**, and also effect minor repairs, providing you with a work report and the Certificate of Calibration so often mandatory on government contracts.

Low group rate results from including your plant with others. Regular trips are made in areas shown. Contact the Scott plant in your area for details.

SPECIAL SERVICE NEEDS are handled on an individual basis to insure immediate service at any time.

*Trademark

**(Mooney Viscometers and RMA Cushion Testers are not serviced under Group Plan)

SCOTT TESTERS, INC.
70 Blackstone St., Providence, R. I.

Celaperm Black Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Intermediate Twist 4 & 6-Lb. Beams	Spinning Twist Cones	Spinning Twist Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Intermediate Twist Cones	Intermediate Twist Bms.
45-13	$1.03	$1.11		$1.12			$1.17	$1.18
45-24	1.03	1.11		1.12			1.17	1.18
55-18	.925	.985		.99			1.04	1.05
55-24	.925	.985		.99			1.04	1.05
75-8	.94							
75-24	.84	.94	.94	.95		$.98	1.00	1.01
75-50				.97		1.00	1.02	1.03
100-11	.90		.98				1.04	
100-24	.81		.89	.90		.93	.95	.96
100-32	.81		.89	.90		.93	.95	.96
100-66	.83					.95	.97	.98
120-40	.77	.80	.80	.81		.85	.86	.87
120-50	.77	.80	.80	.81		.85	.86	.87
150-16	.72				$.81	.81	.81	.82
150-40	.69	.72	.72	.73	.77	.77	.77	.78
200-60	.68		.69	.70	.73	.73	.73	.74
240-80			.67				.71	
300-40	.63						.69	.70
300-80	.63	.65	.65	.66	.69	.69	.69	.70
450-120	.63		.63	.64	.67	.67	.67	.68
600-80							.65	
600-160			.62	.63	.65	.65	.65	.66
900-44	.61		.62	.63	.63	.63	.63	.64
900-70	.61		.62	.63	.63	.63	.63	.64
900-240			.62	.63	.63	.63	.63	.64
1800-88			.60	.61	.61	.61	.61	.62
1800-140			.60	.61	.61	.61	.61	.62
2700-132			.60	.61	.61	.61	.61	.62
2700-210			.60	.61	.61	.61	.61	.62
3000-210					.61	.61	.61	.62

(A) Regular Twist (2.9 thru 5 T.P.I.)—add $.02 to Intermediate Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

(C) 2 lb. Twisted Tubes are the same as 4 & 6 lb. tubes except on 150, 200 and 300 denier Intermediate Twist where the price is $.01 less.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist Twisted Tubes 2 Lb.	Intermediate Twist Twisted Tubes 4 & 6 Lb.	Intermediate Twist Cones	Intermediate Twist Beams
55-18	$1.245	$1.315		$1.32	$1.35	$1.35	$1.37	$1.38
75-24	1.18	1.28	$1.28	1.29	1.32	1.32	1.34	1.35
100-32	1.14		1.22	1.23	1.26	1.26	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.10	1.11	1.11	1.12
200-60	1.00		1.01	1.02	1.04	1.05	1.05	1.06
300-80	.95	.97	.97	.98	1.00	1.01	1.01	1.02

(A) Regular Twist—Add $.02 to Intermediate Twist Price.

Black

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Intermediate Twist Cones	Intermediate Twist Beams
55-18	$1.045	$1.115		$1.12		$1.15	$1.17	$1.18
75-24	.98	1.08	$1.08	1.09		1.12	1.14	1.15
100-32	.94		1.02	1.03		1.06	1.08	1.09
150-40	.83	.86	.86	.87		.91	.91	.92
200-60	.80		.81	.82		.85	.85	.86
300-40	.75	.77	.77	.78	$.81	.81	.81	.82
300-80	.75	.77	.77	.78	.81	.81	.81	.82
450-120			.75	.76	.79	.79	.79	.80
600-160			.73	.74	.77	.77	.77	.78
900-70	.72		.73	.74	.74	.74	.74	.75
900-240			.73	.74	.74	.74	.74	.75

(A) Regular Twist (2.9 thru 5 T.P.I.)—add $.02 to Int. Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

(C) 2 lb. Twisted Tubes are the same as 4 & 6 lb. Twisted Tubes except on 150, 200 and 300 denier Intermediate Twists where the price is $.01 less.

Specialty Yarns

Type 20	Same Price as Regular Yarn
Type C	Same Price as Regular Yarn

$1.39

Denier & Filament	Natural Cones	Natural Beams	Black Cones	Black Beams	Color-Sealed Cones	Color-Sealed Beams
200-64 Int. Twist	1.05		$1.15		$1.35	
200-64 Reg. Twist	1.08	$1.09	1.17	$1.21		
300-80 Int. Twist	1.00					

Terms: Net 30 days. Subject to change without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 21, 1956

"Estron"* Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Tubes	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Tricot Beams Zero Twist
55/13	$1.06	$1.04	$1.02	$1.05	$.98	$.99	$.92½	$.99	$.98½
75/19	1.02	1.00	.98	1.01	.94	.95	.84	.95	....
75/49	1.04	1.02	....	1.03	....	....	....	....	....
100/25	.97	.95	.93	.96	.89	.90	.81	....	....
120/30	.88	.86	.84	.87	.80	.81	....	....	....
150/38	.79	.77	....	.78	.72	.73	.69	....	....
200/50	.75	.73	....	.74	.69	.70	....	....	....
300/75	.71	.69	....	.70	.65	.66	.63	....	....
450/114	.69	.67	....	.68	.63	.64	....	....	....
600/156	.67	.65	....	.66	.62	.63	.63	....	....
900/230	.65	.63	....	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

Current Prices—December 19, 1955

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist & Spun Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Estron" and "Chromspun" are trade-marks of the Eastman Kodak Co.

RAYON STAPLE and TOW

American Viscose Corp.

Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .29
Extra Strength	
1.0 Denier	.34
"Viscose 32A"	.36
"Avisco Crimped"	
1.25 Denier	.34
3.0 & 5.5 Deniers	.31
8.0 & 15.0 Deniers	.33
"Avisco Super L"	
8.0, 15.0 & 22.0 Deniers	.35
Short Staple Blend	.32

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)	
1.5, 3.0 & 5.5 Denier Per Filament	.32
9.0 Denier Per Filament	.34
Grouped Continuous Filaments (4400/300 & 2000/1500)	.65

Prices of other descriptions on request.

Terms: Net 30 days.

Celanese Corp. of America

Current Prices

Rayon Tow

	Bright & Dull
1.5, 3, 5 D.P.F.	.32
8 D.P.F.	.34

Courtaulds (Alabama) Inc.

Effective March 1, 1957

Rayon Staple

	Bright	Dull
1½ and 3 denier	$.29	$.29

Available in 1⅛", 1-9/16" and 2".

THROWING

All Types of Synthetic Yarns

Specialists in NYLON Throwing and Sizing
Crepe, Voile and Combination Twisting
Standard or Pineapple Cones, Spools and Headless Packages
Lace Twists and Stretch yarns a specialty

Centrally located for prompt deliveries to New England manufacturers

MODERN EQUIPMENT ★ **YEARS OF EXPERIENCE**

Synthetic Yarns

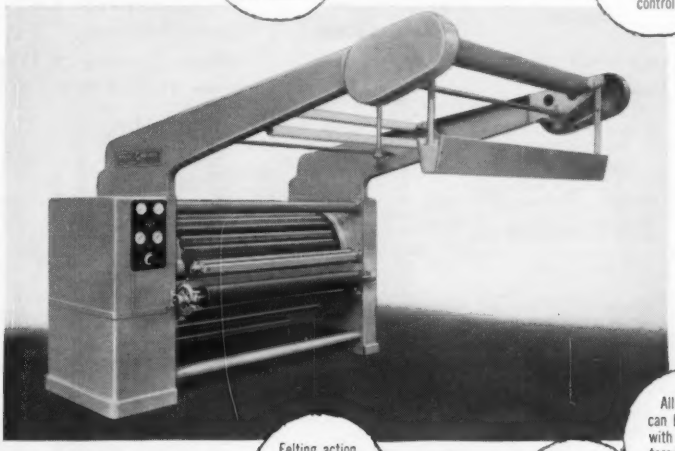
Division of D. W. Rich & Co., Inc.
LOWELL, MASS.

Exclusive Selling Agents: Malina Company

Providence, R. I., 86 Crary Street • **125 West 41st St., N. Y. C.**

Now a 2nd Hi-Torc–

the NEW Gessner 30 Roll Hi-Torc Napper



Field of napping greatly broadened to include greater range and weight of fabrics

Wide acceptance of Gessner's Hi-Torc principle led to this newest napper

Much more nap in much less time

Greater roll torque available under finger tip control

Machine occupies no more floor area than the now-famous Hi-Torc Napper

Adjustable torque-raising action prevents slipped filling

Precise napping energy control allows positive napping effect

All fabrics can be napped with maximum torque raising action

Exact duplication of raising action through hydraulic control system

Breaking, raising and finishing can be done on one machine

Felting action obtained by the simple turn of control knobs.

DAVID GESSNER CO.
WORCESTER, MASS.

Western Representative: E. G. Paules & Co., 1762 West Vernon Ave., Los Angeles, California
Canadian Representative: W. J. Westaway, Montreal, Quebec, Hamilton, Ontario

Gessner Improved Cloth Finishing Machines maintain a standard of performance to meet the exact requirements of your cloth finishing.

"Coloray" Spun Dyed Rayon Staple

	1½ Den. 1-9/16"	3 Den. 2"	4½ Den. 6"	Price per Lb.
	(Code numbers for color and denier)			
Black	1404	1419	1425	37¢
Tan	8004	8019	8025	39¢
Medium Brown	8804	8819	8825	39¢
Silver Grey	1004	1019	1025	39¢
Terra Cotta	8204	8219	8225	39¢
Khaki	3004	3019	3025	40¢
Dark Brown	8604	8519	8525	40¢
Slate Grey	0804	0819	0825	43¢
Light Blue	4004	4019	4025	44¢
Sulphur	2004	2019	2025	44¢
Apple Green	5104	5119	5025	45¢
Peacock Blue	4604	4619	4625	46¢
Medium Blue	4204	4219	4225	48¢
Dark Blue	4404	4419	4425	49¢
Hunter Green	5404	5419	5425	49¢
Indian Yellow	2504	2519	2525	49¢
Pink	6004	6019	6025	50¢
Turquoise	4804	4819	4825	50¢
Malachite Green	5204	5219	5225	51¢
Red	7004	7019	7025	56¢

(In addition to the above, Black is also available in:
1½ den. 1⅛" (1401) 3 den. 1-9/16" (1416) 4½ den. 2"
3 den. 1⅛" (1413) 3 den. 2½" (1420) 4½ den. 4")

Terms: Net 30 days, f.o.b. LeMoyne, Alabama. Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

Rayon Staple

Effective February 8, 1956

REGULAR

1.5 denier Bright
1½" and 2" ..... Withdrawn

VISCALON 44

15 denier 3" Dull ..... Withdrawn

VISCALON 66 (Crimped)

8 denier 3" Bright ..... 33¢
15 denier 3" Bright ..... 33¢
15 denier 3" Dull ..... 33¢

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	45¢	45¢	....
Sandalwood	45¢	45¢	....
Nutria	45¢	45¢	....
Sea Green	45¢	45¢	....
Mint Green	45¢	45¢	....
Champagne	45¢	45¢	....
Cafe Brown	55¢	....	55¢
Midnight Black	45¢	....	45¢
Gold	48¢	48¢	....
Turquoise	45¢	45¢	....
Melon	48¢	48¢	....
Capri Blue	45¢	45¢	....
Charcoal Grey	45¢	45¢	....
Coco	46¢	46¢	....
Sable	47¢	....	47¢

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

ACETATE STAPLE and TOW

Celanese Corp. of America

Current Prices

Staple

Celanese Acetate Staple	Bright & Dull
3, 5.5 & 8 Denier (Regular Crimp or High Crimp)	$.34
2, 12 & 17 Denier (Regular Crimp or High Crimp)	.35
35 Denier	.38
50 Denier	.40
Type F — 5.5, 8, 12, 17 Denier	.35
Type K — (Available under Celanese License Agreement)	.39
⅝" to ⅞" length (All Deniers)	.03 (premium)
Variable Acetate Fiber	.32
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.27*

Tow (Celatow)

3, 5.5 & 8 Denier	$.36
2, 12 & 17 Denier	.37
35 Denier	.40
50 Denier	.42

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.
All previous prices withdrawn.
* No transportation allowed (F.O.B. shipping point).
Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOSIC YARN

NYLON

Allied Chemical and Dye Corporation

Caprolan®†

Effective April 15, 1957

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb	2nd Grade Price/Lb
200	32	¾	Z	B	Bobbin	$1.49	$1.44
210	32	1	Z	HB	Bobbin	1.49	1.44
560	32	1	Z	HB	Aluminum Tube	1.39	1.29
840	136	½	Z	HBT	Aluminum Tube	1.30	1.20
840	136	½	Z	HBT	Beams	1.30	1.20
Heavy Yarn						**Price/Lb.**	
2100	408	0	O	HB	Paper Tube*	$1.27	
2100	112	0	O	HB	Paper Tube*	1.30	
2500	408	0	O	HB	Paper Tube*	1.27	
3360	544	0	O	HB	Paper Tube*	1.26	
4200	680	0	O	HB	Paper Tube*	1.26	
4200	224	0	O	HB	Paper Tube*	1.29	
5000	816	0	O	HB	Paper Tube*	1.25	
5000	280	0	O	HB	Paper Tube*	1.28	
5800	952	0	O	HB	Paper Tube*	1.25	
7500	1224	0	O	HB	Paper Tube*	1.24	
10000	1632	0	O	HB	Paper Tube*	1.24	
15000	2448	0	O	HB	Paper Tube*	1.23	

Terms—Net 30 days.
Prices subject to change without notice.
All prices quoted F.O.B. Shipping Point.
Following are invoiced as a separate item.
Bobbins—45 cents each.
Aluminum Tubes—40 cents each.
Beams—$220.00 each.
Cradles for Beams—$53.00.
* Paper Tubes non-returnable, no charge.
** Type is used to describe luster and tenacity

B—Bright.
H—High Tenacity.
T—Heat Stabilized.

Lowest freight cost prepaid or allowed east of Mississippi River, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

† Allied Chemical's polyamide fiber.

American Enka Corporation

Nylenka Filament Yarn Prices

Effective June 1, 1957

Denier & Filament	Twist	Luster	Tenacity	Package	Yarn Weight per Package	Price per Pound, Std.	Price per Pound, Sub.
15/1	0.5Z	Semi-dull	Normal	Pirn	1 lb.	$5.25	$5.00
15/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	5.50	5.25
15/1	0.5Z	Dull	Normal	Pirn	1 lb.	5.30	5.05
20/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	4.60	4.30
30/6	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.36	2.21
40/8	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.01	1.81
50/13	0.5Z	Semi-dull	Normal	Pirn	2 lb.	1.91	1.76
200/16	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/16	0.5Z	Bright	Normal	Beam	....	1.54	....
200/34	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/34	0.5Z	Bright	Normal	Beam	....	1.54	....

Pirns charged at $.25 or $.45 each, depending upon type. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices

Effective December 19, 1956

Denier	Filament	Twist	Type*	Package	Standard	Second
10	1	O	SD	Bobbins	$8.42	$7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	....
30	10	Z	SD	Bobbins	2.36	2.21
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.81
40	13	Z	SD	Bobbins	2.01	1.81
40	13	Z	SD	Spools	2.11	....
40	13	Z	D	Bobbins	2.06	1.81
40	13	Z	D	Spools	2.16	....
50	17	Z	SD	Bobbins	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.66
70	34	Z	B	Bobbins	1.71	1.66
70	34	Z	D	Spools	1.86	....
80	26	Z	SD	Bobbins	1.71	1.56
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
200	34	Z	B	Bobbins	1.49	1.44
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Spools	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Bobbins	1.39	1.29
840	136	Z	HB	Tubes	1.34	1.24
840	140	Z	HB	Beams	1.30	1.20
840	140	Z	HB	Tubes	1.30	1.20

*Types: D—Dull; SD Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $77.00 and $95.00 depending on type; and beams and crates for beams are invoiced at $220 and $25 respectively.

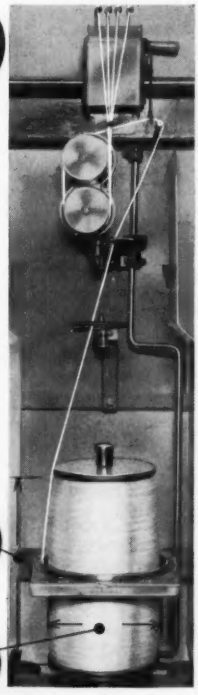
Prices subject to change without notice.

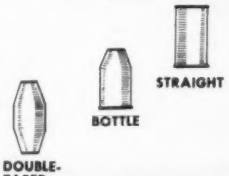
THE NEW

5 POUND

FLETCHER MASTER DUPLEX DOUBLER-TWISTER

FOR THREE STYLE PACKAGES





THE FLETCHER WORKS INC.
2nd & GLENWOOD AVE.
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Are you paying for rings you don't get?

New DIAMOND FINISH standard rings AT SOME POINT IN TIME cost less than using old worn ones. Exclusive DIAMOND FINISH lubricated styles ON CERTAIN OPERATIONS can yield an immediate and large profit on the investment. May we help you study your rings to determine these profit-points for your mill?

WHITINSVILLE (MASS.)
SPINNING RING CO.
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Makers of Spinning and Twister Rings since 1873

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Eliminate broken filaments on Dope-Dyed Nylon with

STEIN HALL SUPRANYL

Supranyl possesses unusual adhesion properties for dope-dyed yarn where the normal polyacrylic sizes fail to render adequate loom protection against broken filaments. Light amber in color, it is readily removable in the scouring bath.

STEIN HALL SUPRANYL*
SPECIFICATIONS:
BASE: Solution of copolymerized organic acids.
VISCOSITY: 800 plus or minus 200 cps. Brookfield at 20°C.
pH: 1
ACTIVE INGREDIENTS: 30% minimum.
COLOR: Clear to light amber.
WEIGHT PER GALLON: 9.6 pounds.
MECHANICAL STABILITY: Very good.
STORAGE LIFE: Minimum 6 months.
APPLICATION:
In the sizing of dope-dyed nylon yarns, Supranyl is diluted with cold or lukewarm water to a 2-7% concentration, depending upon the twist, denier, number of filaments in the yarn, and construction of the fabric to be woven.
Supranyl is the only warp size which adheres properly to dope-dyed nylon and covers the yarn throughout. Supranyl is the only warp size that provides adequate loom protection for dope-dyed nylon as well as natural yarns.
Field tests prove better adhesion for Supranyl than any other dope-dyed filament nylon size. Prove it to yourself. Contact Stein Hall today and our qualified technical salesman will be glad to set up a trial run in your plant.
STEIN HALL
285 MADISON AVENUE - NEW YORK 17, N. Y.

* Above material extracted from Stein Hall Technical Bulletin. Available on request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	$9.47	$8.82
10-1	0	200	Bobbin	8.42	7.82
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Tricot Bms.	5.36	....
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Tricot Bms.	5.41	....
15-1	0	680	Bobbin	5.30	5.00
20-1	0	200	Bobbin	4.42	4.12
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Tricot Bms.	3.02	....
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	.05	680	Tricot Bms.	3.07	....
20-20	0.7Z	209	Bobbin	6.00	....
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	....
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	....
30-26	0.5Z	200	Bobbin	2.49	2.21
40-7	0.5Z	200	Bobbin	2.11	1.81
40-13	0.5Z	200	Bobbin	2.01	1.81
40-13	0.5Z	200	Tricot Bms.	2.11	....
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	670/680	Bobbin	2.06	1.81
40-13	0.5Z	670/680	Tricot Bms.	2.16	....
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	200	Bobbin	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0	200	Tubes	1.71	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.56
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	200	Bobbin	1.56	1.46
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	....
210-34	0.7Z	330	Bobbin	1.59	1.44
260-17	1Z	100/300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
780-51	0.7Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs/Beam	1.30	1.20

Color-Sealed Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
70-34	0.5Z	140	Bobbin	$2.06	$2.01
200-34	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79

Industrial Yarn

				Price/Lb.
2520-420	0	300/700	Paper Tube	$1.27
4200-700	0	300/700	Paper Tube	1.25
5040-840	0	300/700	Paper Tube	1.25
7560-1260	0	300/700	Paper Tube	1.24
10080-1680	0	300/700	Paper Tube	1.24
15120-2520	0	300/700	Paper Tube	1.23

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 100—Bright, normal tenacity.
Type 140—Bright, color-sealed, black, normal tenacity.
Type 200—Semidull, normal tenacity.
Type 209—Semidull, normal tenacity.
Type 300—Bright, high tenacity.
Type 330—Bright, high tenacity, more heat & light resistant.
Type 400—Semidull, high tenacity.
Type 670—Dull, normal tenacity.
Type 680—Dull, normal tenacity.
Type 700—Bright, high tenacity.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item.
Bobbins—25 cents or 45 cents depending on type
Aluminum Tube—40¢ each
Draw Winder Tubes—$.70 or $1.00 depending on type
Tire Cord Beams—$220.00 each
Cradles for Tire Cord Beams—$115.00 each
Tricot Beams—$95.00 each
Cradles for Tricot Beams—$130.00 each
(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Tubes 1st Gr.
30-20	0	Dull	57	$2.86
40-27	0	Semidull	56	2.41
40-27	0	Bright	55	2.41
40-27	0	Dull	57	2.46
70-34	0	Semidull	56	$2.01
70-14	0	Bright	55	2.01
70-34	0	Bright	55	2.01
70-34	0	Dull	57	2.06
100-34	0	Semidull	56	$1.94
140-28	0	Bright	55	1.89
150-34	0	Semidull	56	1.91
220-50	0	Bright	51	1.84
250-50	0	Bright	55	1.86
1100-250	0	Semidull	59	$1.50
1100-250	0	Bright	51	1.50

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.
Type 59—Semidull, high tenacity.

Tubes are invoiced as a separate item at $.70 each. The only exception to this is an $.80 charge on the tubes used for 30 Denier Dull. All tubes are returnable for credit.

* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

The Chemstrand Corp.

Current Prices

"Acrilan"

2.0 denier Semi-dull staple and tow	$1.18
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.12
3.0 denier Bright & Semi-dull staple and tow	1.12
5.0 denier Bright & Semi-dull staple and tow	1.12
8.0 denier Bright and Semi-dull staple and tow	1.12

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept.

Effective November 1, 1955

Dynel Staple

Natural Dynel	
3, 6, 12, and 24 Denier, Staple and Tow	$1.05 per lb.
Whitened Dynel, and Dynel Spun with Light Colors: Blonde, or Gray	
3 and 6 Denier, Staple and Tow	1.20 per lb.
Dynel Spun with Dark Colors: Black, Charcoal, and Brown	
3 and 6 Denier, Staple and Tow	1.30 per lb.

Prices are quoted f.o.b. South Charleston, W. Va.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"** Acrylic Staple & Tow

Type 42	1st Grade
1.0 Denier Semidull & Bright—Staple only	$1.48
2.0 Denier Semidull	1.33
3.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull Color-sealed Black	1.63
6.0 Denier Semidull & Bright	1.20
4.5 Denier Semidull	1.20
10.0 Denier Semidull	1.20

Tow—Total Denier 470,000
Staple Lengths—1½", 2", 2½", 3", 4½"
High Shrinkage Staple same price as Regular Staple

Type 39 $1.06

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 4.2) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Terms: Net 30 Days.

** "ORLON" is DuPont's registered trade-mark for its acrylic fiber.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective November 15, 1956

"Verel"*

Deniers	Dull and Bright
2, 3, 5 and 8	$1.10 per pound

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of the Mississippi River. Seller reserves the right to select route and method of shipment. If buyer requests and seller agrees to a route or method involving higher than lowest rate buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

NYLON

American Enka Corp.

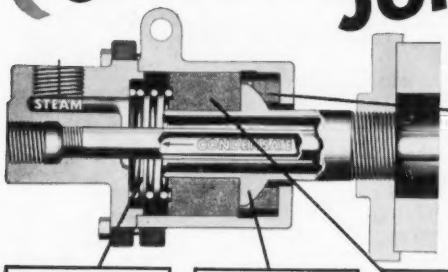
Nylenka (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1⅛, 1½, 2, 2⅝, 3, 4½	$1.28
6	bright	3, 4½	1.28
8	bright	2⅝	1.20
10	bright	3	1.20
15	bright	3	1.20
15	semi-dull	3	1.20

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

Only 4 internal parts in this self-supporting Johnson Joint



1. SEAL RING — of special carbon-graphite. Eliminates packing and oiling.

4. SPRING — For initial seating only. In operation joint is pressure sealed.

3. NIPPLE — Rotates with roll, seals against ring.

2. GUIDE — Also of carbon-graphite. Makes joint self-supporting.

With this 3000 Series Type S-B2 Joint, an assembly plate can be added at any time; it is used with the Johnson Syphon Elbow, to hold internal parts in position when the head is removed. Write for Bulletin No. S-2001.

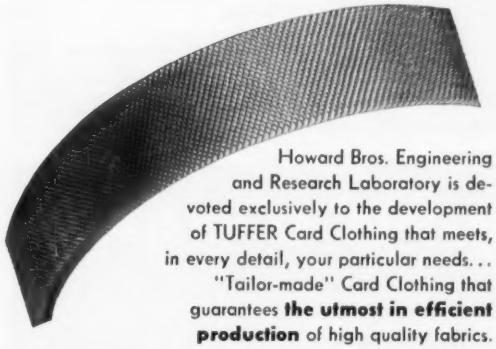
The Johnson Corporation

844 Wood St., Three Rivers, Mich.

Tuffer TRADE MARK **CARD CLOTHING**

Engineered to your SPECIAL NEEDS

FOR SYNTHETIC FIBRES



Howard Bros. Engineering and Research Laboratory is devoted exclusively to the development of TUFFER Card Clothing that meets, in every detail, your particular needs... "Tailor-made" Card Clothing that guarantees **the utmost in efficient production** of high quality fabrics.

1866—90th Year—1956 *Your inquiry involves no obligation.*

C-6

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Southern Plants: Atlanta, Ga., and Gastonia, N. C.

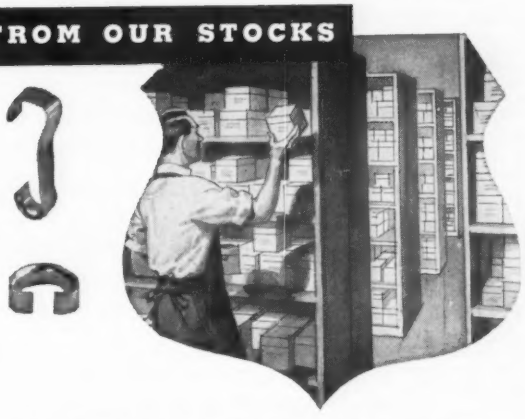
Direct Representation in Canada

U. S. RING TRAVELERS

A STYLE AND SIZE FOR EVERY FIBRE

SERVICE *that satisfies*

FROM OUR STOCKS



From large stocks at Providence and Greenville, our normal procedure is immediate shipment in full; or in any case enough to keep you going without interruption. Once familiar with your needs, we anticipate your requirements so that—

Your orders can be shipped consistently from stock.

FROM OUR REPS

Our field men are in a position to bring a wealth of experience and information into focus on a specific traveler application you may be "fighting". U.S. reps listen attentively, recommend intelligently and follow through energetically TO HELP SOLVE YOUR TRAVELER PROBLEMS.

U. S. RING TRAVELER CO.

159 ABORN STREET, PROVIDENCE, R. I.

Southern Warehouse: 1443 Augusta Rd., Greenville, S. C.

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Greenville, S. C. Box 1048 Phone 3-0915

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Providence Box 1197 GAspee 1-0100

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Athens, Ga. Box 1187 LIberty 6-1647

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H. R. FISHER
Concord, N. C. Box 83 State 2-1640

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1½"—4½"	None made	$1.33	$1.18
1.5	201	1½"—4½"	None made	1.35	1.20
3.0	100/200	1½"—4½"	430M	1.28	1.13
3.0	101/201	1½"—4½"	455M	1.30	1.15
6.0	100	1½"—4½"	330M	1.28	1.13
6.0	101	1½"—4½"	345M	1.30	1.15
15.0	100	1½"—6½"	330M	1.20	1.05
15.0	101	1½"—6½"	None made	1.22	1.07

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1⅛, 1½, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not crimpset.
Type 101 Bright, normal tenacity, crimpset.
Type 200 Semidull, normal tenacity, not crimpset.
Type 201 Semidull, normal tenacity, crimpset.
These prices are subject to changes without notice.
Terms—Net 30 Days.
Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Industrial Rayon Corp.

Effective November 29, 1956

Nylon Staple

1.5 denier	$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 and 15 denier	1.20 per lb.

Bright and semi-dull, required length.
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

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1.25	Semidull	54	1¼"-3"	....	$1.56
1.5	Semidull	54	1¼"-3"		1.51
3.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
4.5	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
6.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41

Terms: Net 30 Days.
F. O. B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

POLYVINYL ACETATE

American Viscose Corp.

Effective October 1, 1956

"Vinyon"® Staple

3.0 denier ½" unopened	$.80 per lb.
3.0 " 1¼" unopened	.80 per lb.
3.0 " 1¼" opened	.90 per lb.
3.0 " 2" opened	.90 per lb.
3.0 " 2" unopened	.80 per lb.
5.5 " 1" opened	.90 per lb.
5.5 " 3½" opened	.90 per lb.
5.5 " 3½" unopened	.80 per lb.

Terms: Net 30 days.

PROTEIN

Virginia-Carolina Chemical Corp.

Fiber Division
Effective January 15, 1951

"Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.00 per lb.	$1.05 per lb.
5 Denier	1.00 per lb.	1.05 per lb.
7 Denier	1.00 per lb.	1.05 per lb.

Bleached "Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.10 per lb.	$1.15 per lb.
5 Denier	1.10 per lb.	1.15 per lb.
7 Denier	1.10 per lb.	1.15 per lb.

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Supplied in staple lengths or as continuous tow (270,000 filaments).
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Calendar of Coming Events

Sep. 11—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Sep. 19-20—Textile Quality Control Association fall meeting. Hotel Barringer, Charlotte, N. C.
Sep. 25-26—Northern Textile Association annual meeting. Wentworth-by-the Sea, Portsmouth, N. H.
Sep. 26-28—Combed Yarn Spinners Association annual meeting. The Cloister, Sea Island, Ga.
Sep. 27—AATCC Delaware Valley and New York Sections joint meeting. Hotel Hildebrecht, Trenton, N. J.
Sep. 27-28—Carded Yarn Association annual meeting. The Cloister, Sea Island, Ga.
Sep. 28—Textile Operating Executives of Georgia fall meeting. Georgia Institute of Technology, Atlanta, Ga.
Oct. 2—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Oct. 2-3—National Cotton Council of America Chemical Finishing Conference. Hotel Statler, Washington, D. C.
Oct. 7-9—Institute of Textile Technology, Charlottesville, Va. Technical Advisory Committee and Board of Trustees meetings.
Oct. 10-11—Southern Textile Methods & Standards Association fall meeting. Clemson House, Clemson, S. C.
Oct. 12—Textile Operating Executives of Alabama fall meeting. Thach Auditorium, Auburn, Ala.
Oct. 15-18—Committee D-13 A.S.T.M. fall meeting. Sheraton McAlpin Hotel, New York, N. Y.
Oct. 28-31—National Industrial Packaging and Handling Exposition. Convention Hall, Atlantic City, N. J.
Nov. 6—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Nov. 14-15—A.I.E.E. Conference on Electrical Applications in the Textile Industry. N. C. State College, Raleigh, N. C.
Nov. 14-16—AATCC National Convention and Exhibition. Hotel Statler, Boston, Mass.
Dec. 4—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.

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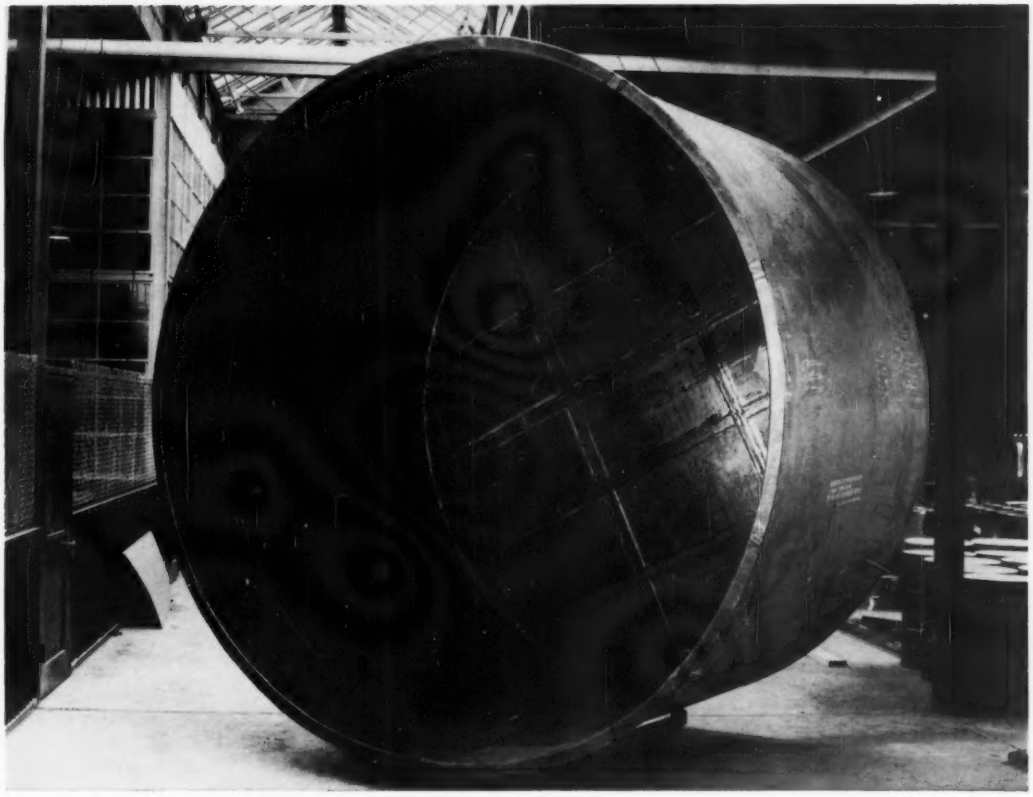

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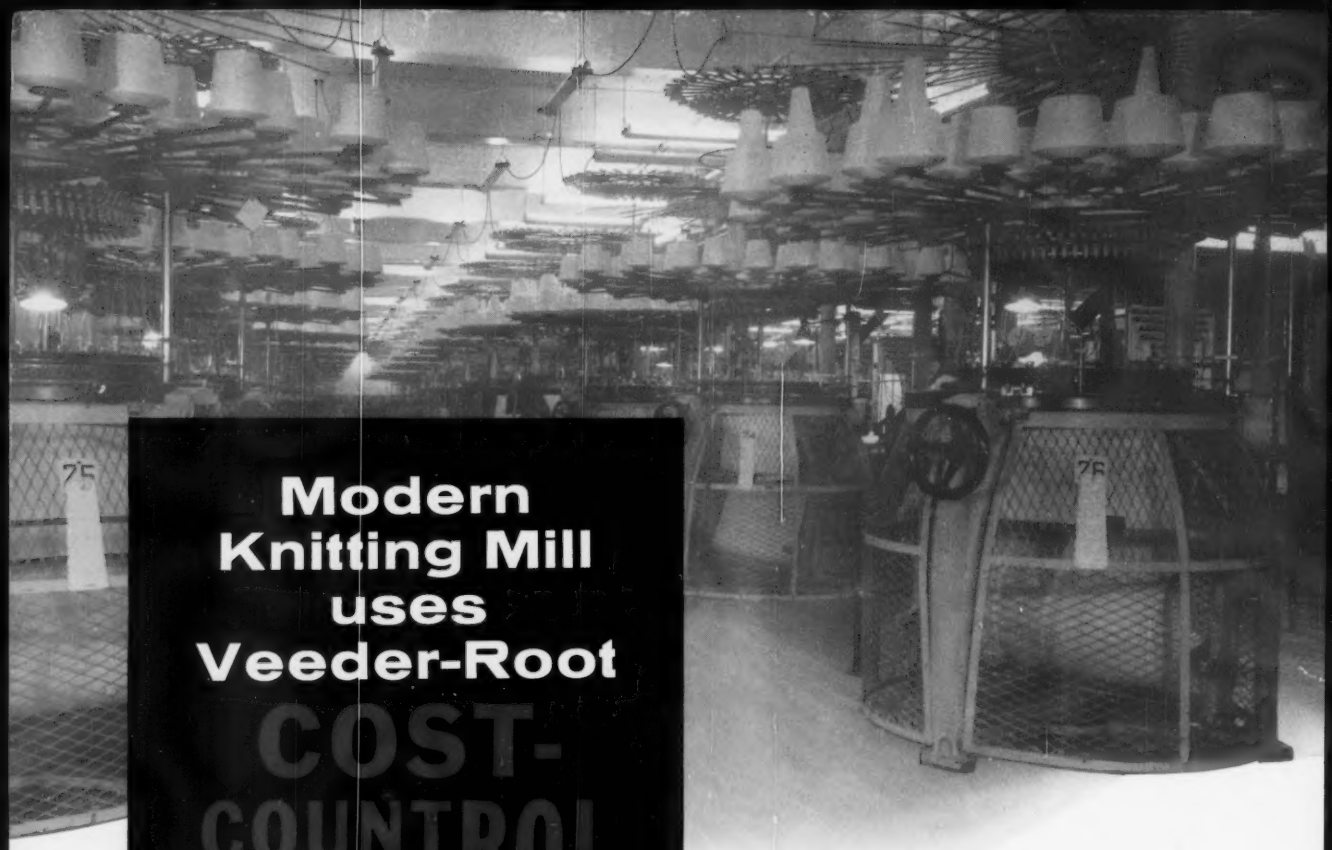

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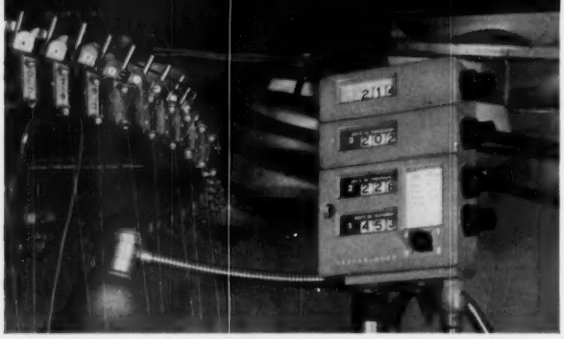
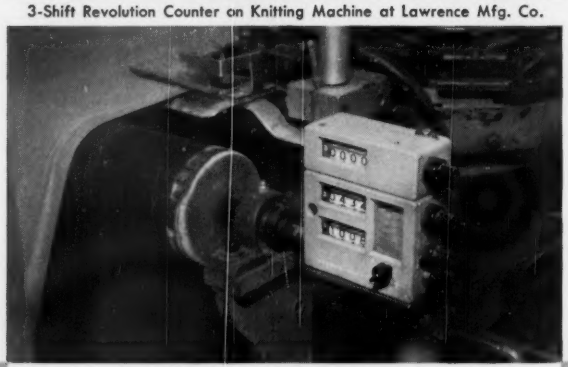


3-Shift Revolution Counter on Knitting Machine at Lawrence Mfg. Co.



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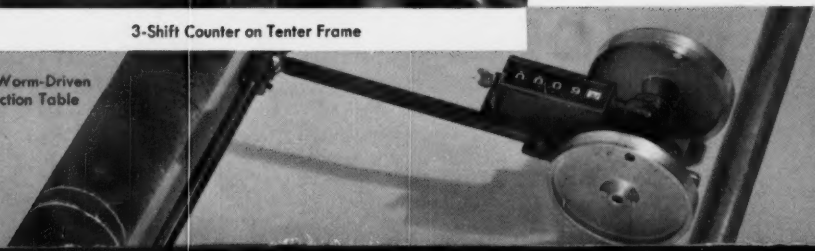

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